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E PURIFICATION OF WATER SUPPLIES *

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CHICAGO

Discussion of water purification in this paper is mited to the hygienic aspects of the subject Clarifi- tion of a muddy water, removal of an excess of iron, ftening of a hard water are all ends desirable in emselves, but they are not purification in the sense in hich that term is here considered Removal of tur- ity may be economically and esthetically important, tallation of a municipal water-softening plant may dominated by considerations of convenience and onomy, but softening and clarification of water are ver matters primarily concerning public health If community desires and can afford to pay for a clear a soft water, it can get it The degree of expense this direction that is justified in comparison with her needs is a question to be determined by each com- nity, bearing in mind that the demands of the mod- city are many and urgent, and remembering that in few instances are funds available to carry out all measures of improvement that appeal to different ups

Most citizens would agree in principle if not in prac- that the sanitary purity or direct relation of a ter supply to health is by far its most important ature Consideration of purification of water is erefore here restricted to the methods of rendering contaminated or potentially dangerous supply safe use

WHY PURIFICATION IS NECESSARY

The present necessity for water purification in civi- ed countries is a consequence of two factors first, e greatly increased demand for water under odern conditions of life, second, the increasing nsity of population on most parts of the earth's rface It is becoming more and more difficult to aw for a water supply of any size on a body of rface water that is uncontaminated or at all events liable to occasional or accidental pollution, as is ll known infectious material discharged by a single man being is sufficient to poison many gallons of ter and to cause hundreds of cases of disease It difficult also to obtain the volume of water sufficient a large and rapidly growing community Many of smaller towns and villages in the United States rely deep wells as a source of supply, and from a sani- y point of view such waters are usually excellent In many regions, however, the amount of available underground water is limited, and if a large amount of water is required by a municipality, surface waters more or less exposed to pollution must be taken Where surface waters are resorted to, the need for purifying them is so plain in some cases that there can be no question of its imperativeness, as with the Merrimac River, used by the city of Lawrence, Mass, the Hudson River, used by the city of Albany, and the Schuylkill River, drawn on by Philadelphia In these cities, simple inspection of the water sources is sufficient to show that the river water used as the source of supply is contaminated with fresh sewage, and in an untreated condition is grossly unfit for drinking purposes Water purification in these cities has been followed by a marked diminution in the amount of certain diseases

On the other hand, the need for purification of a surface water supply is not always so obviously urgent to the untrained judgment, and detailed observation of disease prevalence and of the bacterial character of a water is necessary before general agreement on the desirability of purification is reached This has been the water supply history of some cities on the Great Lakes The city of Cleveland hesitated for several years before undertaking the construction of a filter Detroit and Buffalo have been rather recently convinced of the desirability of protecting their water supplies by chlorination

Still other large cities are so fortunately situated in respect to surface water supplies that artificial purification for the time being is not considered necessary These are practically all in localities where the watershed levied on is owned or controlled by the municipality, and where long storage of impounded waters in natural or artificial reservoirs can be trusted to effect a natural purification New York and Boston are well-known examples of cities depending on protected and stored surface water

THE DEVELOPMENT OF WATER PURIFICATION

Public water supplies, although not uncommon in the early history of southern Europe, were practically unknown in Northern Europe in the middle ages, and the large modern water supply systems have been developed for the most part in the last seventy years Storage of water was undoubtedly practiced in antiquity, but was not consciously resorted to as a means of purification, and the first deliberate attempt at purification of water on a large scale seems to have been less than 100 years ago, when, in 1829 a slow sand filter was built by one of the London water companies Even in this instance the immediate end in view was clarification of a muddy water

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* Read before the Pan American Scientific Congress Washington, C, Jan 4 1916

and it was not until the connection between drinking water and disease became manifest about twenty years later that the filtration of the whole London water supply was more definitely undertaken as a hygienic measure Purification of public water supplies became general in England and on the continent of Europe two or three decades earlier than in this country, owing perhaps to the greater density of population in many regions and to the glaring evidences of pollution in many streams serving as water sources European cities that delayed or boggled water purification often suffered severely from water-borne diseases, as did the wealthy German city of Hamburg in the cholera epidemic of 1892-1893

In the United States as in Europe, development of public water works has taken place almost wholly since 1850, and the introduction of methods of purification is yet more recent A beginning in water purification had been made at Poughkeepsie, N Y, and elsewhere before 1890, but progress has been much more rapid since that date, owing in large part to the impetus given to the study of water purification by the investigations of the state board of health of Massachusetts These investigations, begun in 1887, were soon followed by the construction of a modern sand filter plant at Lawrence, Mass (1893), and the striking success of this filter in reducing typhoid fever served as an object lesson to the whole country

It was calculated by Hazen that in 1900, 6 3 per cent of the urban population of the country (towns of over 2,500 population) were supplied with filtered water, while in 1911, according to G A Johnson, this proportion had arisen to over 20 per cent Table 1, which I have compiled from the information given in the McGraw Waterworks Directory and from other sources of information, shows the present condition in the larger cities of the United States

TABLE 1—CHARACTER OF WATER SUPPLIES IN CITIES OF THE UNITED STATES WITH OVER 10 000 POPULATION IN 1915

Water Supplies	Treated		Untreated		Unknown	
	No of Cities	Population	No of Cities	Population	No of Cities	Population
Wells and springs	28	2,491,810	76	2,215,163	63	1,765,559
Rivers and streams	141	10,769,547	22	1,053,418	25	603,423
Impounding reservoirs	30	1,992 035	19	5,269,524	19	842 526
Lakes	38	5,493 206	25	1,886,312	16	404,690
Wells and rivers	15	571,566	5	92,301	7	452,812
Source not known					32	516,273
Totals	252	21,318 164	147	10,516,718	162	4,645,283

It will be noted that while over 60 per cent of the total city population of the United States is at present supplied with water treated by some method of purification, the actual proportion of the population supplied with hygienically safe water is far greater The water from deep wells and from storage reservoirs is unquestionably in large part of excellent quality even if not subjected to artificial purification It is fair to assume that 30,000,000 out of the 36,500,000 people living in cities with over 10,000 population are now provided with water initially pure or more or less effectively purified Taking into consideration smaller towns and villages, it seems likely that at least 50 per cent of the total population of the United States is today supplied with water of a high degree of purity

Hazen estimated that in 1904 water of a more or less unsatisfactory quality was supplied to approximately 52 per cent of the urban population of the United States in cities of more than 25,000 inhabitants, at present, 1915, this statement, as far as sanitary quality is concerned, would hardly hold true for more than 20 per cent

MODERN METHODS OF PURIFICATION

(*a*) *Storage*—A high degree of natural purification of water can be effected by storage When the water of small streams is impounded in a reservoir instead of being pumped directly into water mains, important changes occur Suspended matter in part sinks to the bottom and the water becomes clearer, the color of the water is usually lessened owing to bleaching by the sunlight, and the total number of bacteria in the water is materially diminished Most important of all, any disease-producing bacteria that may have found their way into the tributary streams tend to perish during the sojourn of the water in the reservoir A cardinal factor in bringing about the death of pathogenic bacteria in water is time So far as is known, disease germs introduced into water never multiply under natural conditions, but progressively and rather rapidly die off The longer a water can be stored, therefore, either in an artificial reservoir or in a natural lake or pond with protected shores, the less liable it is to harbor disease germs This principle of storage, based on the high mortality of typhoid bacilli and allied bacteria suspended in water, is being utilized in the treatment of many large surface water supplies apparently with high success New York and Boston, as already mentioned, are relying mainly on this method to insure the purity of their supplies The safety of the London supply is thought to depend very largely on storage Adequate storage is often all that is needed In cities where other methods of purification are employed, preliminary storage is highly advantageous since it reduces the burden on filters, and in other ways facilitates the application of special purifying treatment

(*b*) *Slow Sand Filters*—The use of beds of sand carefully superimposed on gravel in water-tight basins was probably the first method employed for water purification (London, 1829) on a large scale The water is passed continuously on the sand, and flows through by gravity The earlier European filtration plants were all of this type In this country slow sand filters have been installed at Albany, N Y, Pittsburgh, Washington, D C, Philadelphia and other cities Through such filters water may be commonly passed at a rate of 3,000,000 gallons daily per acre of filtering surface, and if the water treated is not very turbid or badly polluted, a rate of 6,000,000 gallons or more daily may be permissible It is important that the speed at which the water passes through the sand shall not vary suddenly or in different parts of the filter, and ingenious devices for regulating the flow are in use in order to maintain a uniform rate of filtration Disturbance of the filtering surface by ice also impairs the efficiency of the operation, and in some instances has been followed by outbreaks of disease

One of the principal elements of expense in the operation of slow sand filters is the necessity for removing and eventually cleaning and replacing the thin upper layer of sand which becomes clogged in operation The frequency with which the sand surface must be scraped and renewed depends largely on the amount of suspended matter in the water treated and on the rate of operation The use of ample preliminary settling basins or storage reservoirs will lessen the operating cost, as well as introduce an element of safety Taking into consideration the interest on the capital invested in construction and other proper capital charges, together with the cost of maintenance, the average cost of purifying water by slow sand filters is about $8 per million gallons under present conditions in this country On the basis of a daily per capita water consumption of 125 gallons, this involves an annual cost of about 36 cents per capita

(*c*) *Rapid Sand Filtration*—Slow sand filters are not adapted for use in many parts of the United States because the amount and fineness of the suspended matter in many American rivers leads to premature clogging of the sand and a total obstruction of operation A somewhat different type of filter known as the mechanical or rapid filter has proved to have marked advantages in dealing with very muddy water, such as is found in the Ohio and Mississippi rivers If a turbid water is first treated with some coagulating chemical, such as aluminum sulphate or iron sulphate, it can be passed through sand at a much higher rate than is possible with the untreated water The development of rapid filtration with the use of a coagulant has been largely a matter of American invention, and in its beginning depended to a great extent on the use of patented processes and mechanical devices protected by patent The expiration of some of these patents has opened the road for a wider application of this method, and has been followed by important developments Experiments at Louisville and Cincinnati have established the applicability of the coagulating process to large volumes of water, and at present rapid sand filters are in operation at Cincinnati, Minneapolis, St Louis and many smaller cities Suitable automatic devices for controlling the application of the coagulating chemical are indispensable, since any material excess or deficiency of the coagulant is fatal to successful or economical operation Many of the earlier installations of rapid filters by private firms were not properly supervised, and in some cases the original plant was improperly constructed or allowed to deteriorate so that the whole process for a time fell into a measure of disrepute

The cost of construction of rapid sand filters is much less than that of slow sand filters, but the cost of operation is greater Reckoning all charges, the total cost per million gallons of water purified averages distinctly less (about $6 per million gallons) by the rapid than by the slow process

(*d*) *Germicidal Treatment*—Although in the course of years a great variety of chemical substances have been proposed for the disinfection or partial sterilization of water supplies, only a few of these have won any extended practical application The use of *ozone* for water sterilization possesses certain theoretical advantages Several small plants using ozone have been operated in European countries, but in practice the relatively high expense of generating the ozone and bringing it into intimate contact with the water to be treated has so far proved an obstacle to the utilization of this mode of treatment for large supplies It is possible that the availability of cheap electric power for generating ozone, combined with other favorable factors, may under some conditions render ozonization desirable The development of cheaper germicidal processes, however, has checked, perhaps permanently, the general introduction of ozonization

The objection of high cost obtains also with respect to the use of *ultraviolet rays* These rays, which are conveniently generated by specially constructed lamps, have a high germicidal power, and quickly destroy bacteria in clear water Experimentally ultraviolet sterilization has very desirable qualities, but thus far, owing to the expense of operation and to the necessity for a preliminary clarification of very turbid waters, it has not been used in this country for large scale installations

The use of *calcium hypochlorite* ("chloride of lime," or "bleaching powder") has for some years past quite overshadowed other methods of germicidal treatment Variations in the character of the water and in the composition of the commercial bleaching powder affect the amount that it is necessary to add to secure germicidal efficiency, but in general the quantity of the powder used ranges from about 5 to 15 pounds for each million gallons of water treated The cost of bleaching powder under normal conditions has been less than 2 cents a pound Since the opening of the war, the cost has been greatly increased Including the expense of application, hypochlorite treatment costs not more than one tenth as much as filtration The action of the hypochlorite is similar to that of ozone, and depends on the strongly oxidizing powers of the hypochlorous acid that is formed when the bleaching powder is added to water The advantages of the hypochlorite treatment are the cheapness, harmlessness, ease and speed with which it may be employed The chief objection is the liability to the production of disagreeable tastes or odors which its use entails Chlorin gas itself has a distinctly unpleasant odor even in small quantities, and the action of the hypochlorite on certain organic matters present in water also generates disagreeable tastes and smells Complaints on this score in communities in which hypochlorite treatment of the water is practiced are especially common in cold weather Waters differ in respect to their tendency to develop objectionable odors, and in practical operation some waters are very troublesome An important improvement in the field of water disinfection has been the substitution of liquefied chlorin gas ("liquid chlorin") for calcium hypochlorite The gas, which is generated by the electrolysis of brine, is dried, cooled and compressed and is then marketed in liquid form in portable cylinders under pressure The advantages claimed for the use of the gas include superior economy and simplicity in regulation Liability to cause unpleasant odors is said to be much less by this mode of treatment Overdosing, however, may occur both with liquid chlorin and bleaching powder

RESULTS OF WATER PURIFICATION

When a polluted water that serves as a source of municipal supply is treated by slow sand filtration, the most conspicuous immediate change in the health of the community is a drop in the typhoid death rate This has been demonstrated repeatedly in European cities, as in Hamburg, for example, and in many American cities In Lawrence, Albany, Pittsburgh and Philadelphia, slow sand filtration of a highly polluted river water has been followed by a reduction in the reported typhoid mortality to one third or even one fourth of that formerly prevailing A decrease in water-caused infant mortality has also been noted,[1] it is yet unknown to what extent the connection between infant mortality and sewage-polluted water supplies is due to infection with the typhoid bacillus In some instances, though not in all, the so-called Mills-Reincke phenomenon has been observed, namely, a decline in the general death rate minus the typhoid component, and in the reported deaths from certain other diseases, such as tuberculosis and pneumonia, not commonly regarded as water-borne[2]

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[1] McLaughlin Pub Health Rep 1912, No 77

There is no doubt that some deaths from typhoid infection both in infants and adults have been and still are reported under some other designation I have elsewhere[3] called attention to the decrease in reported deaths from "malaria" in Albany, N Y, following the installation of a sand filter It is unquestionably true that in other cities some of the deaths in the past reported as due to "malaria" or "typhomalaria" should have been properly classed with those from typhoid fever Mistaken diagnosis may explain to some degree such decline in general death rates as cannot be referred directly to the diminution in deaths specifically attributed to typhoid fever Thus, in St Louis (Table 2) a correspondence can be noted in some years between the number of reported deaths from typhoid fever and the reported deaths from "malarial fever" In more northern cities, in which, for various reasons, the diagnosis of death from "malaria" is less likely to be made, the same correspondence can yet be noticed under certain conditions (Table 3) There seems no escape from the conclusion that at least some—probably a large proportion—of the deaths recorded as due to "malarial fever" in these cities were in reality caused by typhoid infection

It has further been shown by Dublin,[4] from a study of insurance records, that the normal expected mortality is doubled among typhoid convalescents during the first two years after their recovery from the disease In his statistics, tuberculosis, diseases of the heart and kidneys, and pneumonia were prominent among the causes of death in a limited number of typhoid patients subsequent to recovery If this conclusion proves generally valid, there must always be expected some lessening of the general mortality in addition to that due to the typhoid component, and perhaps in some cases a measurable diminution in the death rate from tuberculosis and other diseases accompanying a decrease in typhoid fever due to water purification In a word, certain individuals appear to be *so affected by the typhoid* infection that although surviving for a time, they die within two years from tuberculosis or cardiac lesions To what extent the Mills-Reincke phenomenon and Hazen's theorem are explicable on this basis is matter for further investigation to determine

TABLE 2—DEATHS REPORTED IN ST LOUIS

Year	Typhoid Fever	Malarial Fever
1890	140	226
1891	165	216
1892	441	326
1893	215	284
1894	171	179

Granting that many deaths from typhoid fever and its sequelae are prevented by slow sand filtration, the question may be raised as to what degree of safety is attained by this method, whether absolute or limited The necessity of care in operation is well known Bacterial and other observations clearly show that dangerous bacteria may pass through the sand, if there is any "accident" to the filter or any "disturbance" of its normal action The epidemics of cholera at Altona, Germany, and typhoid fever at Lawrence, Mass , illustrate the way in which the formation of ice can interfere with the safe operation of a filter

While the harm from such unusual interruption of *normal filter* action is sufficiently demonstrated, it is not so easy to measure the degree of danger existing under more ordinary conditions Reliance on bacterial averages of effluents may be misplaced, since a low average may be reached even if occasional breaks occur in a long series of low numbers Should typhoid bacilli pass through a filter during one hour in twenty-four or for one day in the year, absolute protection is plainly not afforded While the data for a final judgment on this point do not exist, it must be admitted that there is some evidence that the attempts to treat a highly polluted raw water place at times too great a burden on the filter Intestinal bacteria of the *Bacillus coli* type may appear in the effluent in such cases in numbers thought by some observers to indicate danger[5]

TABLE 3—DEATHS REPORTED IN CHICAGO 1891

Month	Typhoid Fever	Malaria
January	67	7
February	61	9
March	71	16
April	136	18
May	408	22
June	167	7

Among the recent attempts to establish standards for safe drinking water may be noted the report of the commission appointed by the U S Treasury Department to consider standards for water supplied to the public by common carriers engaged in interstate commerce[6] The commission reported as follows "1 The total number of bacteria developing on standard agar plates incubated twenty-four hours at 37 C shall not exceed 100 per cubic centimeter 2 Not more than one out of five 10 cubic centimeter portions of any sample examined shall show the presence of organisms of the *B coli* group " A study of the records of filtration plants shows that in some instances the application of such a standard would lead at times to the condemnation of filter effluents It has been suggested that the standard proposed is too severe for general municipal water supplies,[7] and perhaps this is a just criticism, but in any case it is clear that the margin of safety in some filtration plants is not very great

The results of rapid or mechanical filtration are essentially similar to those of slow sand filtration The percentage of bacterial removal reaches practically the same height as in the slow sand filter, and a marked decline in typhoid fever has been observed in many cities following the introduction of rapid filters In Cincinnati, Columbus, Ohio, Paterson, N J , and other cities, the typhoid death rate has sunk to low figures after rapid filters were installed The necessity for careful and unremitting supervision of operation is quite as great in the case of rapid filters as with those of the slow sand type The safety of the mechanical filter effluent is no more certain or absolute than that of slow sand filters

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[2] Sedgwick and MacNutt Jour Infect Dis , 1910, lvii, 489
[3] Jordan, E O Tr Am Soc Civ Engineers, Inter Eng Congress, 1905, liv, D, p 206
[4] Dublin Am Jour Pub Health, 191[illegible] N S , v, 20
[5] McLaughlin Pub Health Rep , Jan 26, 1914
[6] Bacteriological Standard for Drinking Water, Reprint 232, U S Pub Health Rep , 1914
[7] Fuller Jour Franklin Institute, July, 1915, p 42

Excellent results as regards bacterial efficiency and security from typhoid infection are achieved by bleaching powder and by liquid chlorin treatment The chief difficulty experienced in this mode of water purification lies in the close approximation for many waters of the limit of germicidal efficiency and the limit of inoffensiveness If unpleasant odors are produced by the chemical, the maintenance of an adequate bactericidal strength often proves difficult in the face of complaints from hundreds of water consumers The city of Cleveland is thought to have suffered excessively from typhoid in 1913 in consequence of a decrease in the dosage of hypochlorite[8] Temporary cessation of the hypochlorite, or reduction to an amount inadequately germicidal, may sometimes be followed by a definite typhoid epidemic, as in the outbreak which I investigated at Quincy, Ill, in 1913[9]

TABLE 4—DEATHS FROM TYPHOID PER HUNDRED THOUSAND POPULATION MILWAUKEE WIS

Year	Death Rate	Remarks
1906 1910 (average)	27	
1911	19	Hypochlorite used intermittently
1912	25	Hypochlorite used continuously after September 1912
1913	11	Hypochlorite used continuously after September 1912
1914	8	Hypochlorite used continuously after September 1912
1915	6†	Liquid chlorin treatment begun March 31 1915

* From information kindly furnished me by Dr G C Ruhland health commissioner Milwaukee
† Estimated

A remarkable reduction of typhoid has been observed in some cases to accompany the hypochlorite treatment The experience of Milwaukee is in point

Other similar instances are on record in which a marked typhoid decrease has been chiefly attributable to chlorin treatment of the public water supply In such cases it is interesting to note that although clarification is not effected by the chlorin treatment, the sanitary success seems at least as great as when filtration is practiced

TABLE 5—METHODS OF WATER PURIFICATION IN CITIES OF THE UNITED STATES WITH OVER 10 000 POPULATION

	Number of Cities	Population
Slow sand filtration		
With chlorin	13	2,880 233
Without chlorin	10	1 073,200
Rapid sand filtration		
With chlorin	105	7 348 987
Without chlorin	46	3,835 080
Chlorin treatment alone	57	5 793 419

One noteworthy development of the chlorin treatment (hypochlorite or liquid chlorin) has been its application either to the raw water or to the effluents of slow sand and rapid filters Hypochlorite dosage of the water applied to filters or of the filter effluents has, in fact, become an almost universal procedure (Table 5) It does not yet appear that this practice is accompanied by any measurable decline in typhoid fever in cities previously served by a modern well-operated filter

THE OUTLOOK

A few probable developments in water purification in the United States can be forecast It seems likely that the public demand for a clear, as well as a purified water will increase, and that sand filtration of the mechanical type will become more general It is also probable that the increase in pollution of surface waters consequent on growing density of population will tend to overburden filter plants, and that if the raw water cannot be protected, chlorination will be generally resorted to as an adjunct to filtration In the near future practically all surface waters not adequately purified by protected storage will be treated by some purifying process Already approximately 80 per cent of the population of cities of over 10,000 inhabitants and over 50 per cent of the total population of the country are supplied with purified surface water, or from ground water sources of excellent sanitary quality At the present rate of progress, water-borne disease in the cities and larger towns of this country will be relatively rare within ten years[10]

PELLAGRA CAUSATION AND A METHOD OF PREVENTION

A SUMMARY OF SOME OF THE RECENT STUDIES OF THE UNITED STATES PUBLIC HEALTH SERVICE

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One of the outstanding features of the epidemiology of pellagra is the striking relation of the disease to poverty In reflecting on this and in considering the elements that differentiate poverty from affluence, diet, in view of the conspicuous place it has always had in discussions of the disease, naturally arrested attention Approaching the problem of the possible relation of diet to pellagra in this way, it seemed permissible to assume, on the one hand, that the diet of the poor, that is, of those who as a class are the principal sufferers from the disease, is, for some reason, pellagra-producing, and, on the other, that the diet of the well-to-do, who, as a class, are practically exempt, is, for some reason, pellagra-preventing The thought was near, therefore, that it might be possible to prevent the disease by providing those subject to pellagra with a diet such as that enjoyed by well-to-do people Early in 1914, it was proposed to put this idea to a practical test

Before the test was actually begun, studies of the prevalence of pellagra at institutions, such as prisons, asylums and orphanages, were made, the results of which, in the light of the recent advances in our knowledge of beriberi, very strongly suggested the idea that the disease was dependent on a diet that was, for some reason, faulty, and that this fault was in some way either prevented or corrected by including in the diet suitable proportions of the fresh animal protein foods and legumes[1] These findings not only confirmed the original conception, but also helped in defining this more clearly, and, moreover, made it possible to formulate more definite plans, which were temporarily broadened to include a test of diet in the treatment as well as in the prevention of the disease

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[8] Collins and Perkins Cleveland Med Jour 1914 xiii 786
[9] Jordan E O Jour Infect Dis 1913 xiii 16
[10] Typhoid in the Large Cities of the United States in 1914, special article The Journal A M A April 17 1915 p 1322

TREATMENT

At my suggestion, Dr W F Lorenz,[2] who was at that time studying the psychiatric manifestations of pellagra at the Georgia State Sanitarium, treated a series of twenty-seven cases in the insane at that asylum exclusively by diet Considering the character of the cases with which he was dealing, his results, as well as those of Dr D G Willets,[3] who for a time continued the work begun by Lorenz, were notably favorable

When the various recent methods of treatment, each warmly advocated by its author, are critically reviewed in the light of the test made by Lorenz and by Willets, one can hardly fail to be impressed by the fact that the one thing they all appear to have in common is the so-called "nutritious" diet, and it is difficult to escape the conclusion that it is to this single common factor that the marked success that is usually claimed for the "treatment" should properly be assigned

It is of much interest to note that fully fifty years ago Roussel,[4] on the basis of long experience and from a critical review of the literature of his day, came to precisely the same conclusion This is so much to the point that it is quoted herewith

> Without dietetic measures *all remedies* fail When drugs and good food are simultaneously employed it is to the latter that the curative action belongs, the former exercises simply an adjuvant action and is without proved efficacy except against secondary changes or accidental complications[5]

Hereafter the clinician who would attribute therapeutic value to any drug or other remedy in the treatment of pellagra should be prepared to show, what has not heretofore been done, that the curative effect claimed cannot be attributed to the diet It is true that the claim is not infrequently made that the beneficial effects of the remedy advocated were obtained without any change in diet When this claim is critically considered, however, it amounts usually simply to this, that the observer gave no instructions as to a change in the patient's diet, or assumes that such change as was made was too slight to merit consideration It should not be overlooked that the symptoms of the disease (sore mouth, diarrhea) are very frequently such that the patient, entirely on his own initiative, may or does add or increase the proportion of the liquids (milk, eggs, broth) in his diet And this may be done even before the physician is consulted

Again, in order to substantiate the claims made for some particular remedy, it is sometimes asserted that the patient's diet had all along included an abundance of the animal proteins and legumes Careful inquiry in a number of such instances has almost invariably shown that what is meant in such cases is that either the family table was known, or was assumed to be well supplied with these foods of which the patient was, perhaps quite naturally, assumed to have partaken abundantly The important possibility that the patient, by reason of a personal idiosyncrasy or otherwise did not actually eat these foods is almost invariably overlooked That these foods may, in some degree, enter into the pellagrogenous dietary calls, however, for no denial The question always to be borne in mind is Was it enough? The possibility, if not the probability, of a "twilight" zone within which a very slight change in any of the dietary components may cause an important shift of balance is not to be overlooked In the present state of our knowledge, therefore, the question of a sufficient proportion cannot in all instances be answered on the simple statement of the case That as a matter of fact the proportion of the foods in question in these, which may be called borderland cases, was not enough is very strongly suggested by the favorable result of the simple expedient of having the patient continue the diet on which he is supposed to have subsisted, seeing to it, however, that there is actually consumed an abundance of the animal foods and legumes This and the unsatisfactory progress of those patients who for one reason or another fail or refuse to cooperate in taking the diet is decidedly illuminating

Such observations as I have been able to make strongly suggest that real recovery from an uncomplicated attack may not take place until after a minimum of about three or four months of full feeding of fresh animal proteins and legumes But this should not be taken to mean that thereafter recurrences are impossible A "recurrence," so-called, may conceivably take place after the lapse of any interval if there is a return for a sufficiently long period to a pellagrogenous, that is, "faulty" diet In pellagra, as in other conditions, the renewed operation of the essential causative factor may be expected to bring about a renewed manifestation of its effects

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[1] Prof Carl Voegtlin tells me that at about the same time, or even previous to this time, he had independently formed somewhat similar views, which he presented at the 1914 session of the American Medical Association (The Journal A M A, Sept 26, 1914, p 1094) The following quotations from this paper will give the student of the subject the essentials of Voegtlin's conception

"From a survey of the clinical and pathologic aspects of pellagra, I have arrived at the conclusion that we are dealing with a chronic intoxication While the agents at work in this intoxication are as yet unknown, I am inclined to believe that toxic substances exist in certain vegetable foods, not necessarily spoiled, which, if consumed by man over a long period of time may produce an injurious effect on certain organs of the body This hypothesis does not rule out the possibility that a dietary deficiency [vitamin] may play a role in the production and treatment of pellagra Extensive feeding experiments which I have carried on during the last year with animals, such as mice, rats and a few monkeys, on an exclusive vegetable diet, have shown that these lower animals develop certain gastro-intestinal symptoms, and sometimes die if put on an exclusive diet of corn, carrots, sweet potatoes, oats, etc Symptoms arise, often within three or four days, which point to the presence of an intoxication in these animals. Death resulted in some cases in a remarkably short time (three or four days) At necropsy constant lesions were found, such as hyperemia and hemorrhage in the gastro intestinal canal Sometimes the kidneys, lungs and other organs show a congestion and slightly hemorrhagic condition "

"It is probably more than a mere coincidence that the population of that part of the world in which pellagra is *endemic* lives on a mainly vegetable diet"

"The recent advances in the field of nutrition suggest new avenues of approach to the solution of this difficult problem One will have to consider very seriously

"1 A deficiency or absence of certain vitamins in the diet

"2 The toxic effect of some substances, as aluminum, which occur in certain vegetable food"

"[The possible relation between aluminum and pellagra was also discussed in a recent monograph by Alessandrini and Scala (Contributo nuovo alla etiologia e pathogenesi della Pellagra, Roma, 1914) which I received at the time of proofreading These investigators claim that colloidal silica contained in drinking water is one of the most important etiologic factors, inasmuch as they succeeded in producing lesions resembling pellagra in animals fed on water containing colloidal silica Colloidal aluminum hydroxid or a mixture of colloidal silica and alumina produced the same results In view of the fact, first discovered by us, that aluminum occurs in certain vegetable food in relatively large amounts the work of the Italian authors furnishes additional evidence that aluminum occupies a prominent position in the etiology of pellagra]"

"3 A deficiency of the diet in certain amino acids"

[2] Lorenz, W F The Treatment of Pellagra, Pub Health Rep, Sept 11, 1914

[3] Willets, D G The Treatment of Pellagra by Diet, South Med Jour, 1915, viii, 1044

[4] Roussel, Theophile Traite de la pellagra et des pseudo pellagres, Paris, 1866, p 529

[5] The italics are Roussel's

PREVENTION

In planning the test of the preventive value of diet, it was decided to take advantage of the universally recognized fact that "normally" pellagra tends to recur in the individual from year to year

In order to obtain as significant and decisive results as possible, it was necessary to submit a large number of pellagrins to the test under known conditions Fortunately, two orphanages were found in May, 1914, each having a high incidence of pellagra among its inmates Later this preventive test was extended to include two groups of insane at the Georgia State Sanitarium

In the study at the orphanages, Assistant Surgeon C H Waring was associated with me, and in that at the Georgia State Sanitarium, Assistant Epidemiologist D G Willets

Orphanage Study—The two orphanages at which the value of diet in the prevention of pellagra has been tested are located in Jackson, Miss At both, cases of pellagra have been recognized for several years During the spring and summer of 1914, up to September 15, a total of 209 cases of pellagra were observed in the children of these orphanages Although a number of these at both institutions were known to be admission cases, others appeared to have developed first after considerable periods of residence, while a large proportion were in long time residents The factor or factors causing pellagra and favoring its recurrence seemed, therefore, to be operative at both institutions

At both places hygienic and sanitary conditions left much to be desired Both were overcrowded Each drew and has continued to draw its drinking water from the public supply One has a water carriage sewerage system connected with that of the city, the other is provided only with unscreened privies At the latter a great deal of soil pollution was noted

Before beginning the test it was requested that no change be made in hygienic and sanitary conditions, this request, it is believed, has been fully complied with

Since about the middle of September, 1914, the diet at both orphanages has in certain respects been supplemented by the Public Health Service At both institutions a very decided increase was made in the proportion of the fresh animal and of the leguminous protein foods The milk supply was greatly increased The children between 6 and 12 years of age were provided with a cup of about 7 ounces of milk at least twice a day Those under 6 had it three times a day Until the spring of 1915, the milk used was all fresh sweet milk In April of that year, buttermilk was added to the diet, this was served at first only on alternate days to those over 12 years of age, later it was served to all at the midday meal Eggs, which had not previously entered into the regular diet of these children, were served those under 12 years of age at the morning meal It had been the custom to serve fresh meat but once a week, this was increased to three or four times a week

Beans and peas, which had been conspicuous in the diet only during the summer and fall, were made an important part of nearly every midday meal at all seasons No canned foods other than tomatoes were allowed, in order to eliminate the possibly injurious action on the foods of the high temperatures to which they are necessarily subjected in the process

The carbohydrate component of the institution diets was modified with the object of reducing the proportion of this element In this connection it may be noted that though the corn component was much reduced, it was not wholly excluded Corn bread was allowed all children once a week, and grits once or twice a week in addition to those over 12 years of age

Of the 209 cases of pellagra observed at the two orphanages during the spring and summer of 1914, up to September 15, not less than 172 completed at least the anniversary date of their attack under observation In only one of these 172 pellagrins, following the change of diet, was there recognized, during the year 1915, evidence justifying a diagnosis of a recurrence, although on the basis of Rice's[6] experience at an orphanage in Columbia, S C, there might reasonably have been expected from 58 to 76 per cent, or from ninety-nine to 130 of them to recur Furthermore, there was observed no new case in any of the nonpellagrin residents, 168 of whom were continuously under observation for at least one year Recent admissions aside, during 1915 there has been no pellagra at one, and but a single case at the other of these institutions

Asylum Study—Through the courtesy and with the very helpful cooperation of the officers and staff of the Georgia State Sanitarium, two wards of pellagrins, one in the colored and the other in the white female service, were made available for the test

Large numbers of cases of pellagra are observed annually at this institution, the largest in the South A large proportion of these are admission cases, but cases of intramural origin are of frequent occurrence This asylum must, therefore, be regarded as an endemic focus of the disease

The wards were organized for this test late in the fall of 1914 In selecting the patients only one condition was observed, namely, that the patient should be of such type as would give reasonable degree of probability of remaining under observation for at least a year In consequence, a considerable proportion were of a much deteriorated, untidy class

The diet furnished the inmates of these two wards was, as at the orphanages, supplemented by the Public Health Service, and modified so as to increase decidedly the proportion of the animal and leguminous protein elements A cup of about 7 ounces of sweet milk is furnished each patient for breakfast and one of buttermilk at both dinner and supper Fully half a pound of fresh beef and 2 to 2½ ounces of dried field peas or dried beans enter the daily ration In order to favor the consumption of milk, oatmeal has almost entirely replaced grits as the breakfast cereal With a view of reducing the carbohydrate component, syrup has been entirely excluded Corn products, although greatly reduced, have not been entirely eliminated The menu that follows will serve to give a more detailed idea of the character of the diet furnished

WEEKLY MENU

MONDAY

Breakfast—Grits, sweet milk, sugar, broiled steak, hot rolls, biscuits, coffee

Dinner—Roast beef, gravy, peas, potatoes, rice, biscuits, buttermilk

Supper—Stewed apples, light bread, coffee, buttermilk, sugar

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[6] Rice quoted by Goldberger Joseph Waring C H, and Willets, D C The Prevention of Pellagra Pub Health Rep Oct 22, 1915, p 3117

TUESDAY

Breakfast—Oatmeal, sweet milk, sugar, Hamburger steak, biscuits, hot rolls, coffee
Dinner—Beef stew, potatoes, rice, bread, buttermilk
Supper—Baked beans, light bread, coffee, sugar, buttermilk

WEDNESDAY

Breakfast—Oatmeal, sweet milk, sugar, beef hash, hot rolls, biscuits, coffee
Dinner—Pea soup, corn bread, gravy, potatoes, rice, bread, buttermilk
Supper—Stewed prunes, light bread, coffee, sugar, buttermilk

THURSDAY

Breakfast—Oatmeal, sweet milk, sugar, fried steak, hot rolls, biscuits, coffee
Dinner—Beef stew, peas, potatoes, rice, bread, buttermilk
Supper—Baked beans, bread, coffee, sugar, buttermilk

FRIDAY

Breakfast—Oatmeal, sweet milk, sugar, broiled beef steak, hot rolls, biscuits, coffee
Dinner—Pea soup (puree), roast beef, potatoes, rice, bread, buttermilk
Supper—Light bread, coffee, sugar, buttermilk, apples, baked beans

SATURDAY

Breakfast—Oatmeal, sweet milk, sugar, Hamburger steak, hot rolls, biscuits, coffee
Dinner—Beef stew, potatoes, rice, bread, buttermilk
Supper—Bread, baked beans, buttermilk, coffee, sugar

SUNDAY

Breakfast—Oatmeal, sweet milk, sugar, mackerel, bread, coffee
Dinner—Loaf beef and gravy, peas, potatoes, rice, bread, buttermilk, pudding
Supper—Beef hash, bread, sugar, coffee, buttermilk

NOTE—Green vegetables in season at irregular intervals Milk and eggs, as a special diet, are furnished those patients who may require them

Aside from the modification in the diet and the increased watchfulness over the individual feeding, enjoined on the nurses and attendants, no change in the habitual routine of the corresponding services was made

Of the pellagrins admitted to these wards at the time of their organization, or shortly thereafter—that is, up to Dec 31, 1914—seventy-two (thirty-six colored and thirty-six white) remained continuously under observation up to Oct 1, 1915, or, at least, until after the anniversary date of their attack of 1914 Of the colored patients, eight have histories of at least two annual attacks, of the white patients, ten have histories of at least two attacks Nevertheless not a single one of this group of seventy-two patients has presented recognizable evidence of a recurrence of pellagra, although of a group of thirty-two control pellagrins (seventeen colored and fifteen white) not receiving the modified diet, fifteen (nine colored, six white), or 47 per cent, have had recurrences during the corresponding period

Significance—Considering the foregoing results as a whole, bearing in mind that three different institutions are involved, each institution an endemic focus of the disease, and bearing in mind also that the number of individuals is fairly large, it would seem that the conclusion is justified that the pellagra recurrence may be prevented and, in view of the conditions of the experiment, that it may be prevented without the intervention of any other factor than diet In this connection the question arises whether it is permissible to extend this conclusion to the primary attack, apart from its recurrence The character of the answer to this question will depend on the view held as to the nature of the pellagra recurrence

Among the epidemiologic features of pellagra, none is more striking than the tendency for the disease not only to develop in spring or early summer, but also to recur year after year at about the same season Various explanations of this singular phenomenon have been advanced According to Sambon,[7] "this peculiar periodicity of symptoms can be explained only by the agency of a parasitic organism presenting definite alternating periods of latency and activity" A somewhat similar conception appears to be held by the Thompson-McFadden Commission,[8] which distinguishes between conditions favorable for the development of the disease, in the first place, and those that permit its subsequent recurrence Why these and many other observers should consider this periodicity of symptoms as explicable only by the agency of a parasitic organism or of a virus or a toxin presenting definite alternating periods of latency and activity is rather hard to understand when it is recalled that in endemic scurvy,[9] and particularly in endemic beriberi,[10] diseases of well known dietary origin, a strikingly similar periodicity is present It would seem, therefore, entirely permissible to invoke as an explanation of the periodic recurrence in pellagra what undoubtedly is the explanation of the same phenomenon in these other diseases, namely, a modification or change in diet brought about by or incidental to the recurring seasons Viewed in this light, the recurrence in pellagra may be considered as in beriberi, etiologically at least, as essentially identical with the initial attack, and therefore it would seem permissible to conclude that the means found effective in the prevention of recurrences will be found effective in the prevention of the initial attack

NATURE OF THE DISEASE

In the course of the preliminary studies relating to the prevalence of pellagra at such institutions as prisons, asylums and orphanages, to which reference was made early in this paper, the association was found of a very high incidence of pellagra, restricted to certain groups, with a diet which differed from the diet of the exempt groups, so far as could be determined, only in that it included minimal quantities of the animal foods It was inferred at that time that this association had etiologic significance Advantage has been taken of an opportunity to put this inference to the test of experiment The experiment was carried out in association with Assistant Surgeon G A Wheeler at the farm of the Mississippi State Penitentiary, about 8 miles east of Jackson, Miss

At about the center of this farm of 3,200 acres, well isolated from the surrounding community, is the convict "camp" There is no history of the previous occurrence or presence of pellagra on this farm During the period of the experiment there were quartered at the "camp" an average of between seventy and eighty white male convicts, of whom about thirty were present throughout this time Through the kind offices of Dr E H Galloway, secretary of the Mississippi State Board of Health, the interest of Governor Earl Brewer was enlisted, who, on the offer of a pardon, obtained twelve volunteers for the test

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[7] Sambon, L W Progress Report on the Investigation of Pellagra, Jour Trop Med and Hyg, 1910

[8] Siler, J F, Garrison P E, and MacNeal, W J The Relation of Methods of Disposal of Sewage to the Spread of Pellagra, Arch Int Med, October, 1914, p 453 Further Studies of the Thompson McFadden Pellagra Commission, THE JOURNAL A. M A, Sept 26, 1914, p 1090, A Statistical Study of the Relation of Pellagra to Use of Certain Foods and to Location of Domicile in Six Selected Industrial Communities, Arch Int Med, September, 1914, p 293

[9] Lind, James A Treatise on the Scurvy, Ed 3, London, 1772, pp 33 84, 130, 306

[10] Scheube, B The Diseases of Warm Countries, London, 1903

Experiment—White adult males were selected because, judged by the incidence of the disease in the population at large, this age, sex and race group would seem to be the least susceptible to the disease

The "pellagra squad," as it came to be called, was organized between Feb 1 and Feb 4, 1915, with twelve volunteers July 1, 1915, one of the squad was released because of the development of a physical infirmity This left eleven men in the squad, from 24 to 50 years of age, who remained in the test to its termination, Oct 31, 1915 These men were quartered in a small, practically new, screened cottage, about 500 feet from the "cage" in which the other convicts were domiciled Part of this cottage had previously been used, and continued to be used, throughout the period of the experiment as quarters for one of the officers of the "camp" From the time of its organization, the squad was segregated and under special guard

From Feb 4 to April 19, 1915, a period of two and one half months, these men were kept under observation without any change in the regular prison fare As no evidence of pellagra during this preliminary observation period was detected, the diet of the squad was changed at noon, April 19, 1915 The ingredients of this diet were wheat flour (patent), corn meal, (corn) grits, corn starch, white polished rice, standard granulated sugar, cane syrup, sweet potatoes, pork fat (fried out of salt pork), cabbage, collards, turnip-greens and coffee In the preparation of the biscuits and of the corn bread "Royal" baking powder was used

The quantities of the different articles of cooked food actually consumed are illustrated by the following for the week ended Aug 8, 1915 biscuits, 41 81 pounds, rice, 24 25 pounds, corn bread, 24 56 pounds, grits, 27 06 pounds, fried mush, 33 87 pounds, brown gravy, 37 81 pounds, sweet potatoes, 23 62 pounds, cabbage, 4.25 pounds, collards, 23 75 pounds, cane syrup, 5 94 pounds, sugar, 8 75 pounds, making a total of 255 67 pounds of food consumed during the week, or 3 32 pounds per man per day, having a value of 2,952 calories

In this connection it may be pertinent to note that the corn meal and grits were of the best quality obtainable at the local market, and the same as that used at one of the orphanages at which the test, already discussed, of the value of diet in prevention, was made, and at which no pellagra occurred this year Except for one meal in which 4 ounces of meat were included, the animal proteins and legumes were almost entirely excluded

The character of the labor performed by these men during the week for which the statement of the quantity of food consumed has been given was as follows whitewashing fences and buildings, two and one half days, sawing lumber (ram saw mill) two days, rest, two and one half days

The volunteers kept about the same hours and did about the same kind of work as the other convicts The amount of labor performed by the volunteers, however, was distinctly less than that by the other convicts

The general sanitary environment was the same for volunteers and controls With respect to personal cleanliness, cleanliness of quarters, and freedom from insects, particularly bedbugs, flies and mosquitoes, the volunteers were decidedly better off

Results—Of the eleven volunteers, not less than six developed symptoms, including a "typical" dermatitis, justifying a diagnosis of pellagra Loss of weight and strength and mild nervous symptoms appeared early The gastro-intestinal symptoms were slight Definite cutaneous manifestations were not noted until September 12, or about five months after the beginning of the restricted diet In all six cases the skin lesions were first noted on the scrotum Later the eruption also appeared on the hands in two of the cases, and on the back of the neck in one The scrotal lesion conformed to the type described and figured by Merk[11] and also by Stannus[12]

Although the entire population of the "camp" was kept under observation, no one, not of the volunteer squad, presented evidence justifying even a suspicion of pellagra

The diagnosis of pellagra was concurred in by Dr E H Galloway, secretary of the Mississippi State Board of Health, and Dr Nolan Stewart, formerly superintendent of the Mississippi Asylum for the Insane, at Jackson In excluding the other known dermatoses, the expert knowledge and skill of Prof Marcus Haase of the Medical College of the University of Tennessee, Memphis, Tenn , and of Prof Martin F Engman of the Washington University Medical School, St Louis, were utilized in consultation

Conclusions — The conclusion drawn from this experiment is that pellagra has been brought about in at least six of the eleven volunteers as the result of the one-sided diet on which they subsisted Taken in conjunction with the striking results of the test of the preventive value of diet, the further conclusion seems justified that pellagra is essentially of dietary origin

In order to avoid misunderstanding, it may be well to point out that it does not necessarily follow that all one-sided, "unbalanced" or, as I prefer for the present to speak of them, "faulty" diets are capable of bringing about pellagra any more than they are of bringing about scurvy or beriberi

A definite conclusion as to the intimate mechanism involved in bringing about or in preventing the disease by diet cannot, of course, be drawn from the available data It would be premature to conclude that pellagra is necessarily due to a lack or deficiency of fresh animal or leguminous protein foods Clearly, however, the dietary "fault" on which the production of pellagra essentially depends is capable of being corrected or prevented by including in the diet a suitable proportion of these foods It would be equally premature, moreover, to assume that the pellagra-causing dietary "fault" is capable of correction in this way only The possibility that there may be other foods capable of serving the same purpose is by no means to be overlooked If Funk's[13] suggestion that pellagra is a vitamin deficiency, brought about by the consumption of overmilled corn, is proved to be correct, it may be too, that the use of undermilled corn will of itself correct the "fault" in a diet in which this cereal is the staple There is to be considered also Voegtlin's explanation of the beneficial effect of a liberal diet on the course of the disease Voegtlin suggests that by substituting animal foodstuffs for part of the vegetable food the absolute amount of vegetable products consumed will be reduced considerably, and thus probably also reduce the possibility of an injurious action of the vegetable food on the body, particularly the irritant action on the gastro-intestinal canal On the whole, however, the trend of available evidence strongly suggests that pellagra will prove to be a "deficiency" disease very closely related to beriberi

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[11] Merk Ludwig Die Hauterscheinungen der Pellagra, Innsbruck, 1909, p 24 Fig 6

[12] Stannus Hugh S Pellagra in Nyasaland, Tr Soc Trop Med and Hyg 1913 vii 32

[13] Funk Casimir Die Vitamine Wiesbaden 1914 Prophylaxie und Therapie der Pellagra ins Lichte der Vitaminlehre, Munchen med Wchnschr, 1914, p 698

For the practical purposes of preventive medicine, the point of chief, of fundamental, importance would seem to be the recognition of the fact that the pellagra-producing dietary "fault," whatever its intimate nature or however brought about, is capable of correction or prevention, as the results of the studies summarized above clearly indicate, by including in the diet suitable proportions of the fresh animal and leguminous protein foods[14]

SUMMARY

1 Diet is the common factor in the various methods of treatment recently advocated The marked success claimed for each of these methods must logically be attributed to the factor (diet) which they have in common

2 The value of diet in the prevention of pellagra has been tested at two orphanages and at an asylum for the insane, endemic foci of the disease Marked increases in the fresh animal and leguminous protein elements of the institution diets were made

Of 209 cases of pellagra observed at the two orphanages during the spring and summer of 1914, not less than 172 completed at least the anniversary date of their attack under observation In only one of these 172 pellagrins, following the change in diet, was there recognized evidence of a recurrence, although on the basis of experience elsewhere, from ninety-nine to 130 might reasonably have been expected Nor was any new case observed among the nonpellagrin residents, 168 of whom completed not less than one year under observation

Of the group of pellagrins on the modified diet at the insane asylum, seventy-two remained continuously under observation up to Oct 1, 1915, or at least until after the anniversary date of their attack of 1914 Not one of this group has presented recognizable evidence of a recurrence, although, of a group of thirty-two controls, fifteen have had recurrences Pellagra may, therefore, be prevented by an appropriate diet without any alteration in the environment, hygienic or sanitary, including the water supply

3 At an isolated convict camp, previously free from pellagra, with an average population of from seventy to eighty white males, eleven volunteers were segregated and, after a preliminary observation period of two and one half months, placed on an abundant but one-sided, chiefly carbohydrate (wheat, corn, rice) diet, from which fresh animal proteins and legumes were excluded At least six of these volunteers developed pellagra This result would appear to have been brought about by the diet on which they subsisted

4 A definite conclusion as to the intimate mechanism involved in bringing about or in preventing the disease by diet cannot be drawn from the available data

5 For the practical purposes of preventive medicine, it would seem to be of fundamental importance to recognize that the pellagra-producing dietary "fault," whatever its intimate nature or however brought about, is capable of correction or prevention by including in the diet suitable proportions of the fresh animal and leguminous protein foods

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DRUG ADDICTION

ANALYSIS OF ONE HUNDRED AND FORTY-SEVEN CASES AT THE PHILADELPHIA GENERAL HOSPITAL *

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Our studies were commenced with the idea of determining the merits of the Lambert treatment as compared with other methods of treating drug addictions, and to ascertain the relative value of the various units of this method In the course of our study many other points of interest developed, some of which we have included in our paper All of these patients were discharged several months ago and the records are now on file at the hospital Each patient, however, was thoroughly examined and carefully observed by one of us (Dr McIver) during his sojourn in the institution

The large number of patients coming to the hospital as the direct result of the Harrison Narcotic Law, and the fact of their being under restraint and control, offered unusual facilities for purposes of observation The number studied, 147, while not representing all the material at our disposal, we believed ample for our purpose, and we further felt that a careful analysis of this number was preferable to a more superficial study, or mere reference to the histories, of a larger number of cases

In our series we found that many of the patients used only one drug, thirty-eight taking morphin exclusively, and twenty-seven using only heroin The majority of the patients used the drugs in various combinations, twenty-one indulging in heroin and cocain, while three of the number used cocain, heroin, morphin and hop (opium smoking)

Duration of the Addiction—In a study of the average duration of the various addictions, we find that of morphin the longest, next opium smoking, then cocain and last heroin Eighty-one had taken morphin for an average of 9 1 years, two had been using the drug for thirty-one years, one for thirty-five years, and one for thirty-nine years The average duration of the opium-smoking in forty-three cases was 5 4 years

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[14] In addition to the references already given, the following will be ‘ d of interest
Sherger, Joseph The Etiology of Pellagra the Significance of
a whi ...in Epidemiological Observations with Respect Thereto, Pub
Rep, Washington, June 26, 1914, p 1683, The Cause and
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may be prevented and, in ... G A Experimental Pellagra in
...bout by a Restricted Diet, Pub
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vention of any other factor tha... Aluminum Compounds
...ducts, Pub Health Rep,
nection the question arises whether

*Read before the Section on General Medicine of the College of Physicians of Philadelphia, Dec 13, 1915

One man "hit the pipe" for twenty, and one for thirty, years Forty-six cocain "sniffers" had an average duration of 2 5 years, while in eighty-two heroin cases the average duration of the habit was approximately two years

Amount of Drugs Taken Daily—The average daily dose of morphin taken by our patients was 15 3 grains, the largest amount taken by any patient being 90 grains In comparison with these figures it is interesting to note that L P Brown[1] estimated the average daily dose of morphin addicts of Tennessee to be 8½ grains Our heroin patients averaged 9½ grains daily, 30 grains being the largest amount taken in twenty-four hours by any one of the patients We were unable to form any estimate of the amount of opium smoked or of cocain used, the difficulty in the case of the latter being due to the habit of "sniffing" the drug in unmeasured bulk, and the irregularity with which the patients indulged in its use

Etiology—The age at which the habit was formed was of interest chiefly in showing the youth of many of the patients when they first indulged in this form of social dissipation Two commenced at 16, and two at 17 years One first used morphin at 15 and one at 17 years Five began to use heroin when 17 years old and one when 16 By a curious coincidence five patients also commenced to sniff cocain at the age of 17 and one at 16 years

One hundred and three were males and forty-four were females, ninety-eight were white, two were Mongolians and three were negroes In view of the fact that so many of the Southern negroes are addicted to the use of drugs, we were surprised that the colored race should furnish so small a proportion of the total number The majority of women were prostitutes, and some few of the men were or had been cadets A number were notorious crooks and thieves In all, over fifty occupations were represented, among the number being one physician, two nurses and three druggists The majority were dwellers in, or frequenters of, the "tenderloin"

In considering the question of degeneracy, signs of arrested development, such as abnormalities in the shape and size of the ears and palate, irregularities in the arrangement of the teeth, abnormally shaped heads and marked facial asymmetry, were carefully studied Of the 147 patients, fifty-nine, or 40 per cent, presented one or more of these stigmata to a well-marked degree

Some writers have emphasized the fact that "neurotics" tend to acquire the cocain habit rapidly and Block[2] says that "Normal persons never become drug habitues" While we believe that Block's contention is true as regards the majority of drug addicts, our observation is that normal persons may and do become habituated to the use of morphin through taking it over a considerable period of time for the relief of pain or insomnia, however, these patients, should the cause be removed, offer the best prognosis

When questioned as to why the habit of opium-smoking had been formed, all who so used the drug stated that it was first indulged in for pleasure and acquired through association in the "tenderloin" Of the morphin users, the largest number, twenty-eight, learned of the effects of the drug through its hypodermic administration by a physician or through a physician's prescription The next largest number, twenty, first used morphin as an alternate or substitute for opium smoking Eighteen acquired the habit through association as a social diversion, ten took morphin for the first time on their own initiative for the relief of pain or insomnia, six used it as a substitute for heroin and five were made victims of the drug while patients in various hospitals in our own city Of those who used the alkaloid heroin, the largest number, fifty-six, acquired the habit through association Twenty took heroin instead of smoking opium, or as a substitute for morphin, when these drugs became difficult to obtain The remaining seven resorted to the drug to relieve the effect of alcoholic excesses, insomnia, headache, etc

On analyzing the origin of the cocain habit, we found that of forty-three cases, thirty-two patients first learned to sniff the drug purely for pleasure and ten to overcome the depressing after-effects of morphin indulgence One young man first used cocain on the advice of an instructor in college, as a cerebral stimulant

While these figures prove conclusively that a vast majority of cases of opium smoking, heroin and cocain sniffing are acquired through association, we would emphasize the fact that the largest single factor in the production of morphinism has been professional medication

Association of Alcohol with the Drug Addiction—One hundred and eight patients in our series said they had never used alcohol at all, giving a very high percentage even after making considerable allowance for possible misstatements None were confirmed alcoholics, although a number used alcohol to excess prior to the formation of the drug habit De Quincey, in his Confessions of an English Opium Eater, made an interesting contribution to this phase of the problem as follows "I do not readily believe that any man having once tasted the divine luxuries of opium, will afterwards descend to the gross and mortal enjoyment of alcohol"

The only patient who had used alcohol freely in association with morphin lacked the usual surface pallor and dry skin of the opium habitue, despite the fact that he had taken large amounts of morphin over a period of many years In his case we believe the vasodilator effect of the alcohol had counteracted the usual cutaneous effect of the morphin

Opium Smoking and Morphinism—These habits are so old and so much has been written about them~~, that~~ a separate discussion would be mere repetition A few words about the habits of more recent origin, cocainism and heroinism, may not be inappropriate at this place

Cocain Addictions—While the habit of using cocain antedates by some years that of heroin sniffing, our statistics show that the development and spread of these habits in the Philadelphia "tenderloin" districts were practically parallel The manner in which these "tenderloin" habitues formed the habit (chiefly through association) is in marked contrast to that of the earlier patients, most of whom became addicted through the use of "patent medicines" containing the drug, or through local use and abuse of cocain in the treatment of pathologic conditions of the nose and throat Fortunately the Food and Drug Law has practically abolished the sale of "patent medicines" containing cocain, and nose and throat specialists are now more conservative in their use of the drug Referring to this earlier period, C E de M Sajous and L T de M Sajous[3] say "Occupation is a predominant factor, most of the victims having been medical men, members of the legal profession, literary men and women and the cultured generally"

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[1] Brown L P The Drug Habit in Tennessee abstr The Journal A M A May 2 1914 p 1427

[2] Block New York Med Jour Feb 27, 1915 p 405

We believe at present this type represents only what we may term the sporadic cases, the condition, however, being epidemic in the "tenderloin" Where the indulgence was formerly chiefly solitary, it has now become chiefly social

None of the cases presented the classical sign of cocainomania, the sensation as of something crawling on the skin, the hallucination of the "cocain-bug", and we believe that this symptom has received an exaggerated importance In this connection it will be noted that W D Owens[4] found the symptom only once in twenty-three cases of cocain addiction

In no instance did we find vasomotor dilatation

All of the patients sniffed the drug in the manner escribed later under heroin habit In no instance there any difficulty in withdrawing the cocain, but one case it was stopped immediately, and in exception only one dose was given

Heroin Habit—About 1898 the medical profession began using heroin, then thought to be a safe and efficient drug Some time later it was noticed that patients had become addicted to the use of this drug, but not to the same extent as was the case with morphin

About 1912 the dissipated and vicious began the use of heroin With this class the use of this drug is distinctly a social diversion There are quite a few, however, who began the use of heroin as a substitute for the habit of opium smoking These were perhaps the pioneers

About 1910-1911 there was a restriction placed on the importation and sale of crude opium, it naturally became very expensive and could only be obtained in small quantities by those who could afford it at all Prior to this time the opium pipe was the great source of pleasure to the denizens of the "tenderloin" This perhaps will help to explain why those who had habits already formed began using heroin They had to resort to something less expensive For the past three years the heroin habit has been spreading among the habitues of the "tenderloin" at a terrific rate No other drug has ever claimed half so many victims in such a short time Why the spread has been so rapid is rather difficult to explain, other than that it is indulged in as a luxury and to relieve their excesses Many stated that while heroin did not stimulate their sexual desire, they would take it because it enabled them to prolong the sexual act

Prior to the time when the antinarcotic law was enacted, heroin tablets could be obtained at a reasonable price from various drug stores, "dope" pedlers on the street and from unscrupulous, unlicensed dealers These people bought the drug in large quantities and perhaps at wholesale prices, stored it away to be sold and distributed by their agents at an enormous profit They were known in the "tenderloin" as "dope kings"

The pills were crushed, preferably in a small box or paper, and for this the piston from an ordinary hypodermic syringe answered the purpose admirably The fine powder was then taken up into a glass tube of small bore to the end of which was attached a piece of rubber tubing The glass was inserted into the nostrils, the rubber in the mouth and the drug blown up into the nose When the tube was not accessible the powder was placed on the dorsum of the hand, held semiprone and sniffed up the nostrils Why this method is so universally adopted by the social users of both heroin and cocain is evidently due to the fact that these drugs are absorbed so readily from the nasal mucous membrane

In contrasting the deleterious effects of heroin with those of morphin, we find that the former is far less harmful Our morphin patients usually gave the history of having one or two bowel movements a week, while the heroin addicts seldom went longer than two or three days and often experienced but little or no trouble

In heroinism the pallor was not so marked, the emaciation not so pronounced, nor the symptoms of drug starvation as severe as in morphinism Heroin could be withdrawn in a far shorter time and with a great deal less discomfort or suffering than could morphin The former drug does not check the secretions of the lungs and alimentary canal to the same extent as the latter A bibliography of the most important articles on heroin addiction will be found in Farr's[5] admirable paper

Pathology and Symptomatology—No pathologic studies were made by us, and most of our observations of symptoms were confined to those following withdrawal of the drugs, as treatment was instituted promptly on admission of the patients

Symptoms of Withdrawal or Abstinence Phenomena—These were observed to some extent in every case and we will here merely enumerate the various symptoms presented yawning, sneezing, and lacrimation, early, and later insomnia, nervousness, restlessness, anorexia, nausea, vomiting, pain in the abdomen and lower extremities, diarrhea, profuse perspiration, tachycardia, nocturnal emissions, marked asthenia, weak pulse and collapse There was no rise of temperature exept with complications In a few cases the temperature was subnormal

That the withdrawal symptoms in chronic morphinism are due to the formation and the presence in the blood serum of an antidotal toxic substance has been proved by the experiments of Adriano Valenti[6] at the University of Pavia Dogs were habituated to large doses of morphin and the drug then abruptly discontinued Not only would these dogs then manifest the usual circulatory withdrawal symptoms seen in human beings addicted to morphin, but the same phenomena were obtained by injecting their serum in normal dogs This reaction was not obtained when the serum of unmorphinized dogs was used

Bishop[7] claims to have been the originator of the theory of the manufacturing of an antidotal toxic substance by the body and refers to his publication in The Journal,[8] evidently having overlooked the articles of Hirschloff,[9] in 1904

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[3] Sajous and Sajous Analytic Cyclopedia of Practical Medicine, iii, 506

[4] Owens, W D Signs and Symptoms Presented by Those Addicted to Cocain Observations in a Series of Twenty Three Cases The Journal A M A, Feb 3, 1912, p 329

[5] Farr The Relative Frequency of the *Morphin* and Heroin Habits, New York Med Jour, May 1, 1915

[6] Symptoms in Chronic Morphinism Induced by Withdrawal of the Drug, editorial, The Journal A M A, May 23, 1914, p 1662

[7] Bishop, E S New York Med Jour, Feb 27, 1915

[8] Bishop, E S Narcotic Addiction — A Systemic Disease Condition, The Journal A M A, Feb 8, 1913, p 431

[9] Hirschloff Riedel's Berichte, 1904, p 27, also abstr, Jahresb f Neurol u Psychiat, 1904, p 1228, quoted by Dercum The Tools of Our Trade, The Journal A M A, March 13, 1915, p 882

Prognosis—In considering the prognosis of drug addiction two distinct questions are presented first, the withdrawal of the drug, and second, the permanency of the results

With the morphin cases we found that with the exception of a few long-standing cases, patients who were taking exceptionally large doses, the drug could be withdrawn in from ten days to two weeks without causing any special discomfort As regards the permanency of the results, a large percentage of our patients have returned for a second treatment, some for a third and a few for a fourth A few perhaps remained free from the drug, but only a few Some were free for a week, two weeks or a month, but many stated that they resumed the use of the drug the same day they were discharged It has also been the experience of one of us in private practice that the majority of patients even after they have been off the drug for months, and have been brought to the best possible physical condition, soon relapse and without adequate cause It is a question if the majority of morphin addicts really want to stop using the drug There is, however, a certain percentage who do want to free themselves from the habit and who sincerely aid in the attempt, and they should not suffer because of the insincerity of the larger number

While we do not, therefore, indorse the statement of one writer that the morphin habit "Is as incurable as inoperable cancer," our experience would cause us to be somewhat skeptical regarding the very high percentage of permanent cures reported by proprietors of certain institutions devoted to the treatment of alcohol and drug habits

As already stated, we found heroin not only less severe in its systemic effects than morphin, but also easier to withdraw

In regard to the prognosis of cocainism, we find that it is better than in the case of opium alkaloids, the drug is readily withdrawn and abstinence phenomena are not severe, as in the case of alcohol and morphin Our experience with the cocain habitue is therefore in accord with that of Higier[10]

TREATMENT OF DRUG ADDICTIONS

All drug addicts should be placed where they can be detained until it is considered safe by the physician in charge for them to leave An institution for the treatment of these cases should preferably be located in the country or suburbs and surrounded by ample grounds

The building should be of modern construction, with plenty of light and ventilation, and preferably each patient should have a separate room A hydrotherapy room is desirable, electric batteries for massage will prove of great value, closets for the drugs to be used must be kept locked and concealed from view

On admission to the institution all patients should have a complete change of clothing and a most careful search made by a responsible party to see that they enter their rooms without any of the drugs From the time these patients enter the hospital until they are discharged they must be kept under continuous and close observation

Nurses or attendants should be on duty all the time, and they must be absolutely honest and trustworthy In the treatment of no other trouble does so much depend on the strict reliability of nurses or attendants They must be ever on the alert, for drug habitues are invariably well versed in the arts of deception

The first thing to be accomplished in the treatment is the withdrawal of the drug For the first twenty-four hours the patient should be given enough drug to keep him comfortable, by this method, one acquaints himself with just how much drug the patient really needs No reliable information can be gained from the patient's statement as to how much he has been using, for even though he be telling the truth he invariably uses more than is necessary

Patients should be given the same drug they have been accustomed to, and by their usual methods Free purgation should be accomplished, the methods of catharsis as advised by Lambert is a very good one Strychnin, so strongly advocated by Pettey, was not found necessary

The drug must be withdrawn gradually, and especially is this true with the aged and the debilitated As the drug is being withdrawn, the patients often suffer from nervousness and insomnia, these symptoms can be alleviated to a large degree with very hot baths The bromids, trional, and scopolamin in ordinary dosage are also of great value here For the nausea and vomiting, which are often so persistent, gastric lavage and restriction of diet are perhaps the best remedies For the pains in the limbs, the so-called withdrawal pains, which are usually very annoying, electric massage will prove beneficial Some of the coal tar derivatives, acetyl-salicylic acid (aspirin) and salicylates, may be used to advantage

The diet should be nutritious and easily assimilated, consisting principally of milk and eggs During this period the patient should be confined to bed When the patient is well free of the drug and all the symptoms that follow its withdrawal, he may be given a more liberal diet, but this increase should be made gradually, at this time tonics are efficacious, when able to be up and about a systematic regime of exercise should be instituted, and patients must be taught to lead a quiet and well regulated life

As to how long these patients should be detained, a great deal will depend on the individual case, but certainly not less than three months for the mildest type, some perhaps should be kept a year or more

When a habitue leaves the sanatorium he should seek new environment and engage in some active work, fitted to his ability He should live a God-fearing life, keeping ever in his mind the precious price he has paid for his future welfare and existence

To care for these people only until they are relieved of the withdrawal symptoms is worse than useless

METHODS OF TREATMENT COMPARED

In studying the comparative value of treatments, patients were treated as follows

1 The original Lambert method
2 Lambert's method without the Belladonna R
3 Lambert's method without free purgation
4 Gradual withdrawal
5 Gradual withdrawal with free purgation

The method employed was to select several patients for comparison, of approximately the same age, the same daily dose of the drug or drugs in combination and of the same duration Our conclusions were as follows

1 The original Lambert treatment was more satisfactory than the ordinary, gradual withdrawal

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[10] Higier Munchen med Wchnschr March 7, 1911

2 The Lambert method without the free purgation (using ordinary purgation) was very unsatisfactory, patients suffering intensely and showing a marked tendency to delirium

3 The Belladonna R was the least important element in the Lambert treatment, having little or no greater value than other sedatives, besides having a tendency in certain cases to produce delirium

4 Having a fixed dosage for each patient, as in Lambert's treatment, is an undesirable feature, which does not allow for individual differences, to disturb a patient every hour of the day and night is folly, and to try to blend him to a machine treatment is a very unwise procedure

5 The best method proved to be gradual withdrawal with free purgation as in the Lambert treatment, and sedatives or stimulants as required in the individual case

Patients using daily very large doses of drugs and
long periods of time can only have the drug
lrawn very gradually, without intense suffering
anger of collapse

CONCLUSION

While the medical profession has had much to do with the formation of the morphin habit, and in former years with the development of the cocain habit, it has had little or nothing to do with the remarkable development and spread of the cocain, and especially the heroin, habit of the last few years Farr has drawn a similar conclusion

Degeneracy, as shown by actual signs of developmental arrest, is present in a large proportion of cases of drug addiction The majority of narcotic drug habitues are not also addicted to the excessive use of alcohol

Heroin is not as deleterious in its effects as morphin, and can be much more readily withdrawn

The most valuable unit in the Lambert treatment is the method of free purgation The Lambert treatment, while better than the old method of very slowly withdrawing the drug, is not as satisfactory as gradual withdrawal combined with free purgation and medication to meet the individual requirements

Any treatment which does not take into consideration the presence of the antitoxic substance in the body long after the drug has been withdrawn, and provides for the observation and care of the patient during this time, is almost certain to be void of permanent results

This is the era of preventative medicine and the old axiom that "An ounce of prevention is worth a pound of cure" is certainly true in drug addictions It is the duty of every physician heartily to cooperate with the federal authorities to restrict the use of opium derivatives and cocain to their proper medical functions

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l S Maxwell, *Science*

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3 Sajous and Sajous A
in, 506

4 Owens, W D Signs and Syn
to Cocain Observations in a Series
nal A M A, Feb 3, 1912, p 329

GOITER

AN ANALYSIS OF ONE HUNDRED AND THIRTY-SEVEN CASES *

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In assisting in the preparation of the recent medical and surgical report of the Roosevelt Hospital, I reviewed the results of the work which the surgical staff of that institution has done on goiters for the five years ending Jan 1, 1915 Work which I myself had done in other institutions was included in this report Since January 1, operation has been performed in seventeen additional cases in the Roosevelt Hospital by the members of the surgical staff This makes a group of 137 cases for our study The hospital report was largely statistical, and this study is made to call attention to certain elements not included in it, and to add the results of this year's observations

Before attempting to make deductions from these cases, it is necessary to indicate the different types of goiter for which operation has been done

1 Goiters which annoy simply by their mechanical presence, causing pressure symptoms or deformity or both but not giving toxic symptoms

2 Goiters which give toxic symptoms

3 Goiters which show malignant disease

NONTOXIC GOITERS

Sixty-three patients are included in this group If the histories of these patients were to be taken in the light of our present knowledge, I believe the group would be smaller, among the more recent patients we frequently find that those who at first complain only of uncomfortable lumps in their necks really also have "nervousness," irritability, increased heart action and undue fatigue, and that these symptoms disappear after operation Such cases would now be classified as mildly toxic Since these early histories cannot be rewritten, we must adhere to the classification already given and consider the type of operation and the results These seem to be about the same whether we consider the cases nontoxic or mildly toxic

The operative procedure for these patients is given in Table 1

Enucleation of cystic or colloid nodules is the operation of choice for these patients This is practicable only when globular masses exist which can be shelled out of their beds without undue hemorrhage The other operations are slightly more difficult, but give similar results There was no operative mortality in the entire group, and there were no serious complications The average detention in the hospital after operation was eleven days This period could have been shortened, but the value of rest as a part of the after-treatment has been appreciated

TABLE 1—OPERATIVE PROCEDURES ON PATIENTS WITH NONTOXIC GOITERS

Operations	Number
Enucleation of cystic or colloid nodules	28
Hemithyroidectomy	25
Hemithyroidectomy and partial excision of remaining lobe	10

The later histories of these patients were extremely satisfactory, we were able to trace fifty-five of them for periods varying from nine years to six months Four others made good operative recoveries, but have not yet been out of the hospital six months All but one have remained well so far as the local condition is concerned, none have developed toxic symptoms, and there has been no recurrence of cysts One patient had a part of the remaining lobe removed eight years after a hemithyroidectomy, it had slightly increased in size In this group there were several women who for years had endured the deformity and discomfort of large goiters under the belief that they could not be removed When they left the hospital ten or eleven days after their operations, freed of deformity and discomfort, their delight can well be understood

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* Read before The Bridgeport Medical Society, Oct 5, 1915

TOXIC CASES

Sixty-eight patients are included in this group These patients showed symptoms believed to be largely due to overacting thyroid glands Loss of strength is probably the most constant of these symptoms Increased heart action, restlessness, lack of mental "poise," tremor, digestive disturbances, insomnia, loss of weight, diaphoresis and exophthalmos are other symptoms

Thirty-six patients showed some of the symptoms in moderate degree

Thirty-two patients showed some or all of them in extreme degree

The immediate results of operation on the patients in the first division of this group, those who showed the symptoms in moderate degree, were almost as good as those in the nontoxic group The operations for these thirty-six mildly toxic patients are given in Table 2

There was no mortality from operation, and there were no serious complications Recuperation, however, was not quite so prompt, nor could it be expected with the same confidence as in the nontoxic cases Those who had long-standing goiters showed quicker and better recovery than those whose toxic symptoms came early in their thyroid enlargement. Thirty-one of these thirty-six mildly toxic patients have been followed for periods varying from four months to twelve years Twenty-six of them were reported in excellent condition and attending to their ordinary duties Four had shown improvement but became easily tired and had to proceed with care One had shown much improvement of goiter symptoms, but suffered from associated pituitary disease The five who were not traced were in excellent condition on leaving the hospital

In studying the results of operation in the nontoxic and mildly toxic cases, one must be impressed with their value. It would be difficult to find a group of patients who show more satisfactory results from any form of operative procedure

TABLE 2—OPERATIVE PROCEDURES ON PATIENTS WITH MILDLY TOXIC GOITERS

Operations	Number
Hemithyroidectomy	26
Ligation of superior thyroid arteries	4
Artery ligation and subsequent hemithyroidectomy	2
Excision of parts of both lobes	2
Nodule enucleation	1
Boiling water injection	1

The thirty-one patients who showed symptoms of exophthalmic goiter in extreme degree presented the most difficult problems These extreme cases are seen each year in smaller proportion, improved diagnosis and early treatment usually lead to their relief before the extreme stages of the disease are reached But during the period which this study covers, some very desperate cases were treated Patients are often sent into the general service of large metropolitan hospitals after long periods of neglect or after various forms of treatment have proved futile, and in trying to help these forlorn persons, surgeons are apt to accept some very undesirable surgical tasks

The operations done in this group are given in Table 3

There were six deaths among these patients As noted earlier there was no death rate in the previous groups, and in this group this rate could have been reduced almost or quite to zero by refusal to accept the extremely toxic cases Had this been done, however, some very gratifying good results would have been missed Three of the fatalities resulted from attempts to ligate the superior thyroid arteries The patients were too ill to attempt more, yet one of them died on the operating table, and the others two days after operation It is probable that enlargement of the thymus was a factor in these deaths Garre estimates that 95 per cent of the operative fatalities in exophthalmic goiter are due to this cause, and Kocher has seen five patients die suddenly the first few days after operation from persistent thymus

TABLE 3.—OPERATIVE PROCEDURES ON PATIENTS IN ADVANCED STAGES OF EXOPHTHALMIC GOITER

Operations	Number
Hemithyroidectomy	22
Ligation of one or more thyroid arteries	7
Artery ligation and subsequent hemithyroidectomy	3

Of the three deaths which followed hemithyroidectomy, one came from edema of the lungs and one from pneumonia, each two days after operation, the third came eighteen days after operation with symptoms of profound psychic disturbance It is believed that these patients had progressed to the stage of degeneration of the internal organs

The results in the remaining patients of this group were very encouraging Twenty-three have been traced for periods varying from six months to eight years Thirteen have showed very great improvement, and ten moderate improvement

Two others were followed two months, one with marked improvement and the other with very slight improvement

One who was discharged from the hospital "improved" could not be traced afterward

Many details concerning this group of patients are given in the hospital report previously referred to

If we study the entire toxic group, including both severe and mild cases, we find that fifty-four patients have been traced long enough to be of value in estimating late results Thirty-eight, or 70.4 per cent, have shown great improvement, fifteen, or 27.7 per cent, have shown moderate improvement, and one, or 1.8 per cent, has shown no noteworthy improvement

In comparison, these results are apparently about the same as those reported by other observers It is difficult for surgeons to learn the real postoperative results in large groups of patients, and the published reports cannot always be definite

Kuttner[1] examined the end-results in eighty-five cases of exophthalmic goiter, some treated medically, the rest surgically Of twenty-one treated medically, five patients are dead, nine cases are notably aggravated, six are stationary, and only one patient is capable of working

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[1] Kuttner Verhandl d deutsch Gesellsch f Chir, 1911 Murphy's Year Book 1912

Of the patients treated by successful operation, 69 6 per cent, after periods up to eighteen years, are capable of earning their living, 33 6 per cent are completely cured, 36 per cent are much improved, 16 6 per cent are improved, 13 8 per cent, including two insufficient operations, are not cured

Garre[2] has been able to trace most of the patients on whom he operated In 20 per cent the exophthalmos had not disappeared In 10 per cent the tachycardia persists The rest have been completely cured

Berry,[3] in reporting on 346 cases of various forms of goiter says, "The vast majority of the patients made excellent and rapid recoveries and were completely freed from their symptoms"

Mayo,[4] in reporting on the results of operations in over 1,100 cases of hyperthyroidism, says, "About 70 per cent of the patients consider themselves cured and apparently they are well" The others are improved but not well

Rogers,[5] speaking of exophthalmic goiter, says that 40 per cent are cured by ligation of three arteries, 60 per cent by hemithyroidectomy, and 75 per cent by ligation of four arteries

GOITERS WHICH SHOWED EVIDENCE OF MALIGNANT DISEASE

There were six patients in this group, four with carcinoma, one with papillary cyst adenoma and marked induration of the surrounding tissues, and one with endothelioma Three of the carcinoma patients died after various periods, and the postoperative history of the fourth could not be obtained The patient with papillary cyst adenoma made a slow recovery from an incomplete operation, but was well two years later The patient with endothelioma seemed well four years after operation

CONCLUSIONS

This study has been carried on in a search for the best method of dealing with goiters The following deductions seem to be fair

1 For nontoxic patients who suffer from pressure symptoms or from neck deformity, cyst enucleation or partial thyroidectomy are extremely satisfactory procedures The symptoms are relieved, and the likelihood of later toxicity is almost abolished

2 For mildly toxic patients, operation is also very satisfactory When the toxic symptoms develop in connection with preexisting goiter, cure is almost certain When they develop in the early stages of thyroid hyperplasia cure is usually obtained, but cannot be expected with the same confidence The operation may be by partial thyroidectomy, cyst enucleation, artery ligation or boiling water injection, according to the peculiarities of the case

3 The patients with advanced exophthalmic goiter present the most difficult problems For their successful treatment many elements must be considered, including the complex nature of the ductless glands, their interdependence on each other and on nervous and chemical influences from other parts of the body, and the various therapeutic measures which interrupt this vicious chain of disturbance

The hyperplastic thyroid gland seems to be the cause of many of the symptoms, and it is the organ most easily attacked in our effort to control these symptoms The treatment consists largely in endeavor to control its overactivity

Rest is an important element in this treatment

The injection of boiling water (Porter) has an undoubted influence, and can be used for patients too ill for more radical measures

The ligation of the thyroid arteries is often very beneficial, and can be used in preparing patients for hemithyroidectomy or as a substitute for that procedure

The excision of a part of the thyroid gland has been followed by so many satisfactory results that it must be considered our most reliable therapeutic measure

The administration of drugs and animal extracts, and the use of the Roentgen ray may be beneficial

The choice of these procedures should depend on the condition of the patient If that choice is judicious, nearly all of these patients can be brought to a condition of marked improvement

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[2] Garré Verhandl d deutsch Gesellsch f Chir, 1911, Murphy's Year Book, 1912

[3] Berry, J H Lancet, London, March 15, 1913

[4] Mayo, C H Med Rec, New York, Dec 31, 1910

[5] Rogers, John Paper read before New York Surg Soc, Jan 15, 1915, and personal communication to the author

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NEEDLESS SURGICAL OPERATIONS FROM FAILURE TO RECOGNIZE TABES DORSALIS

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Within the past few years several writers, among them Cabot,[1] Hall[2] and Cheney[3] in this country, and Konig,[4] Lomnitz[5] and others in Europe, have directed attention to operations for supposedly local disease of the abdomen in patients with tabes in whom no disease was found at the laparotomy Careful search through the literature fails to reveal more than casual reference to the frequency of such blunders Surgeons performing laparotomies frequently are fully acquainted with this danger, but it is believed that the following study may stimulate still greater caution

In the past five years (1910-1915) over 1,000 cases of tabes dorsalis have been carefully studied in the Cook County Hospital on the neurologic services of Drs Hall, Grinker, Hassin, Hamill and Kuh These records have been examined to determine the relative frequency of the cardinal symptoms, the number of patients operated on, the frequency of gastric crises, etc In estimating the number of operations, only those have been included in which the patient was told by the surgeon that nothing wrong was found, and in which the old symptoms returned following the operation Cases have been excluded when scars of previous operations were found in the epigastrium, kidney or appendix regions with no record of what was found or done at the operation recorded on the history sheets, or when this could not be learned from the surgeon Obviously some of the latter deserve recognition, as all these patients at the time of admission to the hospital exhibited several or many of the important symptoms of tabes It is believed, however, that this error is not a great one

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[1] Cabot, R C Differential Diagnosis, Philadelphia, 1914, ii, 229, 230

[2] Hall, G W Tabes and the Surgeon, Ill Med Jour, 1910, xviii, 527

[3] Cheney, W F Gastric Disturbances in Tabes Dorsalis, Am Jour Med Sc, 1913, cxlv, 328

[4] König Tabische Krisen, Deutsch med Wchnschr, 1911, xxxvii, 2357

[5] Lomnitz, quoted by K Singer Die Krisen der Tabiker, Berl klin Wchnschr, 1911, xlviii, 2168

Of 1,000 patients with tabes, only five had operations in the Cook County Hospital during the past five years (1910-1915) About 200 tabetics are admitted to this institution annually, and there are approximately 2,400 major surgical operations performed here each year Regarding the remainder of those operated on, it was learned that in ten different hospitals, widely separated from each other and naturally with great variations in size and experience of the surgeons, there were twenty operations on tabetics under mistaken diagnoses in approximately the past four years

It is clear that the mistake is not confined to any special locality Furthermore, it was learned that such operations are fewer in the larger hospitals, such as the Cook County Hospital, than in the smaller hospitals throughout the United States

The following are what have been apparently surgical errors Ninety-seven operations have been performed on 87 patients Of the total number, there were 19 operations on 18 patients for gastric ulcer, 19 operations on 16 patients for gallstones or cholecystitis, 18 operations on 17 patients for appendicitis, 11 patients were operated on 13 times for salpingitis, on 9 patients an exploratory laparotomy was made, 7 operations were performed on 6 patients for renal calculi, 7 operations on 5 patients for postoperative adhesions, and 1 operation for each of the following tumor of the cauda equina, sciatica (nerve stretching), meningocele, ectopic gestation and peritonitis (See the accompanying tabulation)

Of 1,000 tabetics, 8 7 per cent have been subjected to laparotomy under mistaken diagnoses one or more times Furthermore, gastric ulcer was the diagnosis most frequently made, and next gallbladder disease, with appendicitis a close third As regards operations for postoperative adhesions, there were seven on five patients One patient had five laparotomies, the last three for postoperative adhesions, and following each operation the old symptoms of epigastric pain with severe vomiting returned, that is, the gastric crises of tabes

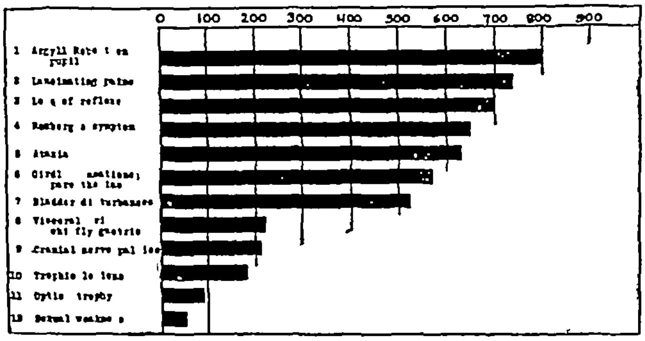

Chart 1 —Relative frequency of the cardinal symptoms in 1 000 cases of tabes dorsalis thus 800 patients presented Argyll Robertson pupils 740 lightning pains, etc. Note that the visceral crises were present in 22 per cent

USELESS SURGICAL OPERATIONS IN ONE THOUSAND CASES OF TABES DORSALIS

Surgeon's Diagnosis	No of Operations
Gastric ulcer	19
Gallstones or cholecystitis	19
Appendicitis	18
Salpingitis	13
Exploratory laparotomy	9
Renal calculi	7
Postoperative adhesions	7
Tumor of cauda equina	1
Sciatica (nerve stretching)	1
Meningocele	1
Ectopic gestation	1
Peritonitis	1
Total number of operations	97 (9 7%)

In Chart 1 is shown the relative frequency of the important symptoms, altered pupillary reactions in 800 patients, lancinating pains, usually early in the disease, in 740, loss of the patellar reflexes or of the Achilles jerks or both in 700, etc It is of interest that visceral crises were observed in 22 per cent of all the patients, that is, 19 per cent of the gastric type, 2 renal, and 1 per cent intestinal crises

In the report by Schaffer[6] regarding the symptoms in tabetics, the following are given in order of frequency pupillary symptoms, lancinating pains, Westphal's sign (loss of patellar reflexes), Romberg's symptom, and urinary disturbances

In Chart 2 the relative frequency of the symptoms included in the previous chart are contrasted with those in the eighty-seven patients operated on, the light line representing the eighty-seven patients operated on, the dark line the incidence indicated in Chart 2, here reduced to a curve

From consideration of this chart it is evident that in 65 per cent of the 87 patients operated on, the "crises" must have largely influenced the decision to operate, for in the entire series, visceral crises were observed only in 220 patients, or 22 per cent This supposition is also supported by statements that the *initial* symptoms leading to the ninety-seven operations were gastric crises in 17 per cent Friedenwald[7] found the gastric crises occurring as the initial symptom of tabes but five times in forty-two cases, and, according to this writer, Erb found them ten times in 400 cases, and Fournier fifteen times in 211 cases

The following brief summaries of case histories are introduced to illustrate how the data used in the charts have been arrived at and also how great the importance attached to early symptoms of "crises" has been in determining operation

Case 1 —L K, woman, aged 46, housewife, when admitted complained of paroxysmal attacks of intense abdominal pain, vomiting and diarrhea for twenty years Twenty years ago she had a right cystic ovary removed No relief followed the operation One year later her appendix was taken out Following this all of her former symptoms returned During the next ten years she had three operations for postoperative adhesions She entered the hospital with her original complaint

Physical examination revealed a poorly nourished individual who appeared acutely ill, sclerae icteric, lips cyanotic, bilateral ptosis, both pupils slightly irregular and not reacting to light There was a generalized abdominal tenderness but no definite rigidity There were multiple abdominal scars of previous laparotomies All the normal reflexes were active and readily elicited, except the Achilles jerks, which were sluggish There was a transverse band hypalgesia about the chest No Romberg's symptom and no ataxia were present Lumbar puncture revealed a clear fluid under normal pressure Nonne negative Cell count showed 15 small mononuclear lymphocytes per cubic millimeter

Here the initial symptoms were a combination of gastric and intestinal crises The first operation, said to have been for a cystic ovary, may possibly have revealed gonorrheal salpingitis, and has not been enumerated in the charts or other statistics That the appendectomy was truly indicated cannot be determined Whether the three successive laparotomies were made for troubles which the surgeon, previous to operation, believed due to postoperative adhesions, or whether the conclusions were arrived at subsequent to the operations cannot be determined from the records

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[6] Schaffer, Karl Tabes Dorsalis Handbuch der Neurologie von Lewandowsky, Berlin 1911, ii 1037 1038

[7] Friedenwald J and Leitz The Gastric Crises of Tabes New York Med Jour 1912, xcvi 13

Case 2—M C, aged 49, married, a traveling man, entered the Cook County Hospital, May 8, 1915, complaining of paroxysmal attacks of nausea and vomiting, epigastric pain and weakness The vomiting bore no relation to food taking, and often appeared suddenly in the middle of the night Attacks lasted from two to three days, and disappeared suddenly In 1908 the patient was operated on for gastric ulcer, but nothing abnormal was found In 1912 he was operated on for gallbladder trouble, and a cholecystotomy was done This gave him no relief, and with the return of his old symptoms the patient submitted to a second operation us stomach for postoperative adhesions He has since postoperative hernia the size of a hen's egg at he last operative scar He is now a morphin

ysical examination revealed ptosis of the right upper eyelid The right eyebrow arched upward more than the left The wrinkles on the right side of the forehead were deeper than on the left, that is, there was compensatory overaction of the right occipitofrontalis muscle The pupils were oval, irregular in outline, and unequal in size Reaction was very sluggish to light There was marked ulnar analgesia Hyperalgesia was present over the thighs anteriorly There was a slight degree of ataxia Romberg's symptom was suggestive There was paroxysmal incontinence of urine The plantar, Achilles, triceps and other reflexes were all readily elicited The patient left the hospital before an analysis of the spinal fluid could be made

This also serves to illustrate the onset of tabes with typical gastric crises After fifteen years of the disease, the plantar and Achilles reflexes are still active

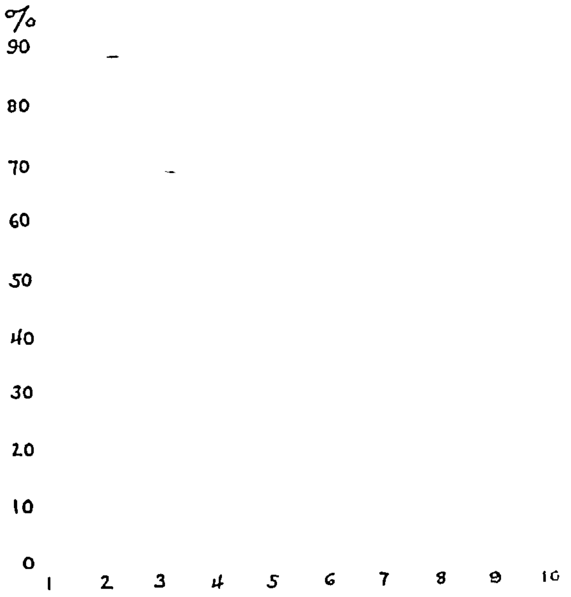

Chart 2—Frequency of cardinal symptoms, the ordi the cardinal sympt the following order 1, Ar pupil, 2, lightning loss of reflexes, 4, Romb 5, ataxia, 6, pare bladder disturbances, 8, 9, cranial nerve pa a, strabismus, etc , 10, t 11, optic atrophy, l weakness The light the eighty seven tab on, the heavy dark line indicated in Chart educed to a curve crises (Ordinate 8) in 65 per cent of operated on as con t 22 per cent in 1,000 cases

Case 3—J H., man, aged 50, druggist, entered the complaining of pain in the left leg present for the pa years Beginning in the left hip, these pains radiate the leg into the foot, and at times were constant, sev sharp There was impaired sensation over the outer s of the left lower extremity The patient stated that one before he lost the sensations of pain and touch in this li e could stick needles into the leg without feeling it s been taking morphin sulphate, 1 grain per dose, to relie se pains

physical examination revealed an emaciated, elderly man medium stature The pupils reacted to light and accom- ion The heart, abdomen and genitalia were negative as a trophic ulcer present at the base of the left The patellar and Achilles reflexes were absent ion was greatly diminished over the lower left No pain was elicited on pressure over the as transferred from the neurologic service f tumor of the cauda equina, for surgical treatment The operation as recorded on the history sheet follows

"Longitudinal incision over spinous processes in lumbar region, down to vertebrae

"*Pathology*—Chronic pachymeningitis, with areas of hemorrhagic character, and adhesions between cord and meninges posteriorly Cord has dark spotted appearance, like old hemorrhages

"*Technic*—Opening and closing spinal canal by laminectomy Opening dura and closure with catgut Clearing adhesions with probe"

During the operation the condition was recognized as tabes Death occurred three weeks later No postmortem examination was made

Over forty-seven years have passed since Charcot[5] described the gastric crises in tabes His work forms the basis of all our knowledge regarding them, and relatively little additional information concerning them has been learned, his account is worthy of repetition

> But of all the visceral symptoms which may display themselves from the period of lightning pains, one which is at once the most remarkable and the least known, if I mistake not, is that which I have proposed to designate by the name of gastric crises Very often, their real signification remaining misunderstood, they are the occasion of grave errors of diagnosis
>
> But it is time to tell you in what these gastric crises consist Suddenly and generally at a period when a paroxysm of shooting pains has seized upon the extremities, the patient complains of pains which, starting from the groins, seem to ascend both sides of the abdomen and to fix th s in the epigastric r At the same time plain of pains situ en the shoulders diate around the trunk in a light anner Then the of the heart com s violent and requenc with t fever ver mm ost e
>
> ely distressi Food is ometimes eling of g and s sym ng hi h

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2 Garré ion Year Book, 1914

3 Berry, J H

4 Mayo, C H

5 Rogers, John 1915, and personal co

2 Crises with vomiting alone

3 Crises with pain alone

4 Crises in which there may be only loss of the appetite

That they may and do occur as the initial symptoms of tabes must be remembered Their average duration varies from one to three days, they may drag on for several weeks with the ultimate exhaustion of the patient The sudden onset and abrupt termination is quite typical of them During the intervals between the attacks, the stomach functions in a normal way During the attacks the pulse rate is accelerated (from 90 to 100) while the temperature usually remains normal

Stomach analysis of the vomitus and of the gastric secretions during the crises fails to reveal anything characteristic Bile-stained mucus with hyperacidity, hypacidity, and even achylia have been found

The blood pressure is raised during the crises Thus Barker[9] reports a blood pressure ranging between 180 and 220 mm Hg during a seven-day attack He noted that with the fall of the blood pressure to normal, the attack promptly subsided Accordingly nitrite medication as well as epinephrin chlorid during the crises gives relief

From a study of the information presented in these charts, it is apparent that the mistaken diagnoses and resulting operations were chiefly in two main groups of patients

1 Tabetics in whom the initial symptoms were the visceral crises and less frequently those with renal or intestinal crises

2 Tabetics in the class designated by Erb as "tabes incompleta" or "formes frustes" by the French These patients presented fewer of the characteristic symptoms of tabes, and the mistakes leading to operations are less surprising

From studying these records it has seemed that the mistakes made have been not so much the result of clinical ignorance as of superficial examination and the failure to consider tabes furthermore, there would seem to be little excuse for such failures when patients present themselves for examination with a history of pain in the stomach, vomiting, rheumatism, paresthesias, arthropathies, bladder disturbances, or fractures without physical violence

In studying these records the possibility of bona fide abdominal disease developing in tabetics has been constantly in mind An example of this follows

Case 4—J G, man, aged 53 (?), a laborer, was admitted to the hospital complaining of general weakness, failing vision, anorexia and ataxia

Physical examination revealed a feeble old man, poorly nourished, and taking but little interest in his surroundings The right eye was missing The left pupil did not react to light, and only sluggishly to accommodation There was no abdominal tenderness or rigidity The patellar reflexes and Achilles jerks were absent Paresthesias were present

The patient was admitted to the neurologic service with the diagnosis of tabes There was sudden onset of intense epigastric pain The pulse became rapid and thready, the face cyanotic, respirations shallow and labored, temperature subnormal, and death occurred five hours after admission

Dr LeCount made the following anatomic diagnosis

"Perforating peptic ulcer of the duodenum, fibrinopurulent peritonitis, edema of the mediastinal tissues and of both lungs, subcapsular petechial hemorrhages of the liver, healed encapsulated caseous tuberculosis of the left lung, tuberculous osteomyelitis of the ribs, moderate kyphosis, moderate hyperplasia of the biliary, mesenteric and tracheobronchial lymphgland, adventitious fibrous adhesions between the lungs and chest wall, syphilitic nodular sclerosis of the aorta, gummatous scars in the leptomeninges, copper-colored scars over the left tibia, marked chronic diffuse nephritis—secondarily contracted kidneys, marked hypertrophy of the left ventricle of the heart, numerous absent teeth—caries, old healed scars of the left temple, infantile cecum, persistent membranous eustachian valve, postmortem digestion of the lining of the esophagus" The spinal cord was not examined

Other patients with tabes were operated on for hernia, many were treated for fractures, some patients with tabes had gallstones removed according to the records, others stones from the kidney None of these, as previously stated, have been included in the unnecessary operations

Recently, we have received a very promising aid to the early diagnosis of tabes in the so-called cytodiagnosis of the spinal fluid "Marked lymphocytosis appears to occur even in the earliest stages of tabes"[10] A positive Wassermann reaction with the spinal fluid is of great value in doubtful cases

As Cabot[11] has stated

> What we are learning in the last few years, since lumbar puncture and Wassermann reactions in the blood and spinal fluid have become matters of routine in doubtful gastric cases, is that any type of stomach trouble, acute or chronic, mild or severe, sharply painful or merely distressing, may be due to cerebrospinal syphilis Until within the past few years, one was on the lookout, if he were conscientious, for so-called gastric crises in tabes What we have learned lately is
>
> (*a*) That we must suspect the possibility of tabes even when the pupils are normal, and must investigate this possibility by means of spinal puncture
>
> (*b*) That any sort of gastric abdominal pain or distress may be due to tabes

It is believed that with a careful examination to exclude tabes, in the future more tabetics will be spared useless surgical operations, and more acute abdominal symptoms will be proved of spinal origin

CONCLUSIONS

1 Of 1,000 tabetics, 8 7 per cent have been subjected to laparotomy under mistaken diagnosis one or more times

2 The "crises" of tabes have largely influenced the surgeon in his decision to operate This statement is supported by the fact that 65 per cent of the eighty-seven patients operated on presented visceral crises In 17 per cent of these, the "crises" were the *initial symptoms* of their disease

3 Mistaken diagnoses and resulting operations occur chiefly through failure to examine the nervous system

4 Gastric ulcer, gallbladder disease and appendicitis are the diagnoses most frequently made

5 Tabetics subjected to several successive laparotomies have, as a rule, been operated on by as many different surgeons

6 A history of paroxysmal attacks of vomiting, rheumatism, paresthesias, bladder disturbances or fractures without physical violence should excite interest to exclude tabes dorsalis

7 The cytodiagnosis of the cerebrospinal fluid, together with the Wassermann reaction with the spinal fluid, are of intestimable value in doubtful cases

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[9] Barker L. F Paroxysmal Arteriospasm with Hypertension in the Gastric Crises of Tabes Am Jour Med Sc. 1910 cxxxix 631

[10] Erb Wilhelm Tabes Dorsalis, Modern Clinical Medicine (Church s Translation) 1911, p 528

[11] Cabot R C *Differential Diagnosis* p 256

THE THERAPEUTIC VALUE OF THE HYPOPHOSPHITES *

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It may be stated, almost as an axiom, that a drug, in order to be useful, must, in general, do one of three things It must produce either a local or general physiologic effect, it must exert a specific demonstrable influence on pathologic processes, or it must have a "food" value

Hypophosphites, used for years in medicine, were first introduced as a cure for pulmonary tuberculosis They have since been recommended as exerting varied physiologic actions, and their use at present is based mostly on the assumption that the hypophosphites are "foods"

At the request of the Council on Pharmacy and Chemistry of the American Medical Association, the evidence for and against the value of hypophosphites in each of these directions has been critically examined, and experiments have been carried out, the latter being especially designed to determine the "food" value The investigation reveals that the evidence *against the usefulness* of hypophosphites is overwhelming

The hypophosphites were introduced into medicine in 1858 by J F Churchill[1] as the result of a physiologic misconception In that year he published his book on the treatment of pulmonary tuberculosis, in which he assumed that the "tuberculous diathesis" depended on a disturbance in the balance of various substances in the organism, and that the disturbance must be in the inorganic elements of the blood He argued that, as iron, chlorids, sulphur and the alkalies had all been used without success in the treatment of tuberculosis, they were not the essential substances involved Taking his cue from the discovery that had been recently announced of phosphorus in the blood, he assumed that phosphorus was the lacking element He concluded that the element phosphorus was not well suited for administration on account of its toxicity and rapid deterioration, and that phosphorus in the fully oxidized form of phosphates was also unsuited as it was not "combustible" Hence, he selected the hypophosphites as being a form of phosphorus nontoxic and yet capable of further oxidation in the organism He stated categorically that "*the tuberculous diathesis depends on a diminution in the element phosphorus and that this element, having to play the rôle of a combustible body, must be administered in a less completely oxidized form than that of phosphoric acid*" [2]

Churchill administered hypophosphites to about thirty patients whom he had diagnosed as tuberculous Nine of these patients he claimed to have completely cured, ten showed clinical improvement, the remainder died A critical examination of the histories of the "cured" patients would lead one to suspect that some cases were pneumonia in which the "cure" occurred at crisis, others malaria and others perhaps tuberculosis in which improvement had occurred, due to the general hygienic measures that were instituted The author mentions that he lost sight of many of the cases, so that we are left quite in the dark as to the ultimate developments It is not remarkable that many of the patients treated should have felt better for a time The hopefulness of consumptives is well known Churchill claimed that hypophosphites did more than merely cure tuberculosis To his mind they acted as hematinics He even claimed that in some of his patients the production of new blood was so great that they suffered from hemorrhages from the nose and from hemorrhoids He went further He claimed a general tonic effect Some of his patients grew heavy beards in an incredibly short time, others cut wisdom teeth with astonishing rapidity, following the administrations of the drug The bedridden rose and walked

From all accounts, the medical men of Churchill's day received his reports with much incredulity, and even derision A number of investigators, evidently taking the matter more seriously, administered hypophosphites to tuberculous patients with the result that many unfavorable reports quickly made their appearance

Dechambre[3] concluded that the hypophosphites were not to be considered at all as specifics in the treatment of phthisis

Trousseau and Vigla[4] emphasized the insignificance of the results obtained by hypophosphite medication

Quain,[5] reporting cases from his clinic at the Brompton Hospital, stated that he was unable to obtain any of the physiologic effects claimed by Churchill, and, further, that the hypophosphites had no favorable action on the course of pulmonary tuberculosis

Pidoux[6] denied the efficacy of hypophosphites as far as the tuberculous process was concerned, but suggested that they might be useful in supplying necessary elements for the repair of tissues

Madden[7] recommended the syrup of hypophosphites of iron, soda, potash and lime, combined with other drugs, as useful in the wasting occurring in tuberculous infections in young subjects, but mentioned the fact that hypophosphites were not as generally beneficial as Irish moss! He submitted no definite evidence in support of his views

Rabuteau[8] administered 3 grams of sodium hypophosphite daily to a healthy woman and observed an acceleration of the pulse, an elevation of the temperature and a beginning plethora, as indicated by an increased color in the face and lips There was also an increase in the quantity of urine With no more evidence than this the author concluded that part of the ingested phosphorus was eliminated, another part was oxidized to supply the phosphorus-containing elements in the organism, and a third part stimulated the formation of red blood cells The work of this author is quoted as an example of the insufficient evidence on which the whole hypophosphite theory rests

Paquelin and Joly,[9] endeavoring to test out the theory that hypophosphites were utilized in the organism, collected the urine from patients after the administration of hypophosphites, and claimed to have recovered the entire amount ingested The only effect that they noted following the administration of the hypophosphites was a diuresis

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* From the Harriet Lane Home and Department of Pediatrics Johns Hopkins University Work undertaken at the request of the Council on Pharmacy and Chemistry, and aided by a grant from the American Medical Association

[1] Churchill, J Francis De la cause immédiate et du traitement spécifique de la *phthisie pulmonaire et des maladies* tuberculeuses, Paris, 1858

[2] " que la diathese tuberculeuse dépendait d'une diminution dans l'économie de l'élément phosphore, et que cet element, ayant a jouer le role d'un corps combustible devait s'y trouver à un degre d'oxydation inférieur a celui de l'acide phosphorique "

[3] Dechambre Gaz hebd de med 1858

[4] Trousseau and Vigla Jour de chem et de Pharm Paris, 1858

[5] Quain Bull gen de therap med et chir, 1860, lviii

[6] Pidoux Union med, Paris, 1869, vii

[7] Madden, in Keating's Cyclopaedia of Diseases of Children, 1890, i, 405

[8] Rabuteau Elements de therapeutique et de pharmacie, Paris, 1872

[9] Paquelin and Joly Compt rend Acad d sc, 1878, lxxxvi.

Vermeulen[10] administered sodium hypophosphite to normal individuals, to tuberculous subjects, to dogs and to rabbits, and concluded that hypophosphites were rapidly eliminated totally and without alteration in the urine He could not see in any of the subjects any change due to the administration of the drug, with the exception that in some instances large doses of hypophosphites seemed to change the respirations in the direction of shortening inspiration and prolonging expiration No figures or tracings are given by the author in support of this view

Boddaert[11] administered hypophosphites to man, to dogs and to rabbits, and recovered 95 per cent in the urine within twenty-four hours He noted a diuretic effect The work of Massol and Gamel,[12] of Panzer[13] and of Delaini[14] confirmed that of Boddaert

Berg[15] found that in man, ingested hypophosphites were excreted largely unchanged, and at the same time the elimination of phosphates was slightly increased He concluded that the hypophosphites were in small part oxidized to phosphates, but that none of the phosphorus was retained, and that, as a means of administration of phosphorus, the hypophosphites were entirely useless

Patta[16] alone found that any considerable amount of ingested sodium hypophosphite was retained in the body This author injected sodium hypophosphite into dogs and rabbits, and recovered only about 50 per cent in the urine in twenty-four hours, and concluded that the remainder was utilized The results obtained by this author are not to be considered in any way trustworthy, as he used a method which is now known to give inaccurate results, and in addition obviously made a mistake in his calculations of results that would lead to a final error of 100 per cent, for he gives an incorrect chemical formula for the reactions involved

Since the evidence as to the utilization of the hypophosphite has been to some extent contradictory, a series of experiments has been carried out by us in the endeavor to determine, by means of methods known to be correct, whether hypophosphites are or are not utilized in the body Sodium hypophosphite (Hoffman-LaRoche Chemical Company) was used This material was found, on analysis, to contain practically the theoretical amounts of hypophosphorous acid Carefully measured portions of a 10 per cent aqueous solution of this salt were taken by four normal men over a period of three days each The solution was taken after the morning and noon meals and before the evening meal Ten c c, equivalent to 1 gm of sodium hypophosphite, was taken at each dose Twenty-four hour specimens of urine for periods beginning and ending at 7 a m were collected for the three days of the experiment and one day succeeding The urine bottles were kept in an ice-box No preservative was added

This method of analysis depended on the oxidation of the hypophosphites to phosphates by means of potassium chlorate, nitric and hydrochloric acids, and the determination of the resulting phosphates by titration with uranium acetate solution Before beginning the experiment, it was determined that normal urines, when treated according to the method adopted, showed the presence of no hypophosphite, and that on adding known amounts of hypophosphite to such urines the entire amount added was recovered It was further determined that no error was introduced by allowing a urine containing hypophosphite to stand in the ice-box for forty-eight hours without added preservative

None of the subjects of the experiment experienced any effect whatsoever from the administration of the drug The results are summarized in the accompanying table, from which it is evident that almost all of the ingested hypophosphite is promptly eliminated unchanged A small amount, however, is unaccounted for in the urine This may have escaped absorption from the intestinal tract or else have been oxidized to phosphoric acid in the body Considering the fact that hypophosphorous acid is readily oxidized even by such weak agents as mercuric chlorid at ordinary temperatures, it is not unlikely that a part was oxidized either in the intestinal tract or parenterally If it was oxidized, the resulting phosphate could benefit the organism only to the same extent as ordinary phosphates, and the calories produced by the oxidation of such a small amount of material could be of no appreciable value to the body Since hypophosphites do not occur in any organ of the body, so far as has ever been determined, there is no reason to suppose that ingested hypophosphites are stored as such or, if they are stored, that the organism would be at all benefited by the presence of such foreign substances

It has been urged that the hypophosphites may be of benefit even if the hypophosphorous acid radical is not utilized It is claimed that the administration of hypophosphites facilitates the absorption of calcium, since calcium hypophosphite is water-soluble, whereas cal-

SUMMARY OF RESULTS

SUBJECT H

Day	Sodium Hypophosphite Intake gm	Sodium Hypophosphite Output gm	Sodium Hypophosphite Balance gm	
1	3 0	2 11	0 89	
2	3 0	2 56	0 44	
3	2 0	1 51	49	
4	0 0	0 20	20	
Total	8 0	6 38		80% eliminated

SUBJECT M

Day	Sodium Hypophosphite Intake gm	Sodium Hypophosphite Output gm	Sodium Hypophosphite Balance gm.	
1	3 0	2 18	0 82	
2	3 0	2 43	0 57	
3	3 0	2 48	0 60	
4	0 0	0 02	02	
Total	9 0	7 11		79% eliminated

SUBJECT S

Day	Sodium Hypophosphite Intake gm	Sodium Hypophosphite Output gm	Sodium Hypophosphite Balance gm	
1	3 0	2 68	32	
2	3 0	2 66	34	
3	3 0	2 52	48	
4	0 0	0 00	00	
Total	9 0	7 86	-	87 5% eliminated

SUBJECT G

Day	Sodium Hypophosphite Intake gm	Sodium Hypophosphite Output gm	Sodium Hypophosphite Balance gm	
1	2 0	2 00	0	
2	3 0	2 46	54	
3	3 0	2 85	15	
4	0 0	0 00		
Total	8 0	7 31		91 5% eliminated

Total average eliminated, 86%

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[10] Vermeulen Onderzoekingen omtrent de physiologische werken van het Natrium hypophosphiet Amsterdam L Kervel 1884

[11] Boddaert A Contribution à l étude de l'action des hypophosphites sur la nutrition Arch de pharmacodynam 1895 1896 i ii 195

[12] Massol and Gamel Bull Acad de méd de Paris, Oct 8, 1901 abstr The Journal A M A Nov 16, 1901 p 1353

[13] Panzer Zeitschrift fur Untersuchung der Nahrungs- und Genussmittel, 1902 v, 11

[14] Delaini Arch d fisiol 1911 ix 329

[15] Berg Biochem Ztschr 1910 xxx 107

[16] Patta Aldo Osservazioni intorno al comportamento degli ipofosfiti nell 'organismo, Arch di farmacol sper e Sc. affini 1910 ix 1

cium phosphate is practically insoluble One could with equally good logic argue that, since calcium chlorid is soluble, the administration of sodium chlorid would *increase calcium* absorption, the fallacy is that, in the presence of phosphates or of other acid radicals capable of forming a nonsoluble compound with calcium, the nonsoluble compound would be formed, whether or not the calcium were originally in a soluble form

It may still be claimed that hypophosphites influence nutrition in some occult way that cannot be definitely determined Such claims may be made for any substance whatsoever and of course cannot be denied, but, in the absence of proof as to the value of the drug, we are not justified in using it merely because it "may do good" If such an attitude were generally taken, the complement of useless drugs in the pharmacopeia would be increased manyfold

The investigations previously referred to in this paper have been carried out chiefly *on man* In the instances in which experiments on animals were also performed, it was demonstrated that the lower animals react to hypophosphites in no way differently from man We are, then, apparently justified in assuming that conclusions drawn from animal experimentation, so far as hypophosphites are concerned, are valid for men Such being the case, the experiments of Forbes[17] and his associates at the Ohio Agricultural Experiment Station give most valuable information as to the real nutritive value of the hypophosphites These experiments were performed on growing pigs, given diets containing an insufficient amount of phosphorus-containing compounds, the deficit being made up by the addition of phosphorus in the form of phosphates—glycerophosphates, hypophosphites, and nucleic acid—each lot of pigs receiving the phosphorus in one of the various forms mentioned The authors concluded from the results of these experiments that, of the compounds of phosphorus tested, the hypophosphites possessed the lowest nutritive value

The pigs receiving hypophosphites, either alone or with nucleic acid, "suffered from great weakness and lameness They were more or less subject to indigestion The legs were weak, especially the hind ones, which trembled and bowed out, and the feet were set far under the body The fore feet were also sore The muscular control was poor The pigs lay down most of the time, and if disturbed would at once lie down again"

These pigs behaved very much as the pigs receiving no phosphorus supplement at all—in fact, the abnormal tendencies were less pronounced in the latter case In contradistinction to these, the pigs receiving extra phosphorus in the form of phosphates or glycerophosphates were entirely normal

At the conclusion of the experiments all of the animals were examined at necropsy One very noticeable finding was that the breaking strength of the bones, accurately determined, was found to be very much less in the pigs fed on hypophosphites than in any other group Further, chemical analysis of the bones of these animals demonstrated a diminished calcium and phosphate content, the total ash was also less

These experiments demonstrate conclusively that the hypophosphites possess no specific value as a source of phosphorus for the body This is not to be wondered at in view of the fact that 85 per cent of the phosphorus ingested in the form of hypophosphite is excreted unchanged, and there is *no proof* that even the remaining 15 per cent is available to the organism *It is doubtful* if there are any conditions in which the body suffers from lack of phosphorus Even should such conditions exist, phosphorus, in the form that it occurs in the ordinary foods or as phosphates, is more *efficient in* supplying the deficit than hypophosphites that must be oxidized before utilization and which are only about 15 per cent oxidized if at all For example, half a glass of milk contains more available phosphorus *than three* large doses of hypophosphites of 15 grains each, as great a dosage as is usually given

What, then, is the therapeutic value of hypophosphites? There is no reliable evidence that they exert a physiologic effect, it has not been demonstrated that *they influence* any pathologic process, they are not "foods" If they are of any use, that use has never been discovered

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[17] Forbes and Associates Research Bull 6, Ohio Agric Expt Sta, 1914

ROUTINE WASSERMANN EXAMINATIONS OF FOUR THOUSAND HOSPITAL PATIENTS *

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AND
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Our object is to present the incidence of a positive Wassermann reaction among patients in a general hospital and to show the prevalence of unsuspected syphilis which can be demonstrated only by a routine test This paper is therefore a statistical summary showing the prevalence of the various types or stages of syphilis in this class of patients, with a discussion of the frequency of a positive reaction in various diseases

Four thousand individual cases have been tested Of this number, 1,800 were in the medical wards and 350 in the neurologic division of the surgical service, in which, in each instance, a routine Wassermann test is done in every case The remaining 1,850 were in the outdoor department or in the general surgical service, in which tests are made only in selected cases

The technic used in carrying out the Wassermann reactions has been described in detail in a previous paper[1] Suffice it to mention here that the original Wassermann technic, with the substitution of a 0 4 per cent cholesterinized alcoholic human heart extract for antigen, was used

Among the 4,000 cases there were 600 giving complete fixation, and these were distributed as follows Forty-eight patients were in the very early stage of the disease, of these, thirteen had a chancre and thirty-five had a generalized rash, 306 were in a later stage of syphilis and showed various manifestations such as periostitis, gumma, endarteritis, ulcers, late rashes, etc, thirteen cases were congenital, 120 cases had central nervous system involvement (these cases are discussed later on in this paper, they do not include those cases which, with negative findings in the spinal fluid, were diagnosed as cerebral syphilis, the latter are included in the 306 classified above as cases in a later stage) There were fifty-four positive cases with aortic disease, ten with epilepsy, ten with disease of the liver, ten with disease of the kidney, nine with pneumonia, seven with diabetes, and the remaining thirteen positive cases were distributed among miscellaneous diseases.

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* From the medical clinic of the Peter Bent Brigham Hospital

[1] Walker, I C The Specificity of Cholesterin with Syphilitic Serums and of Cholesterin Reinforced Heart Antigen in the Wassermann Reaction, Arch Int Med October, 1914, p 563

It is of interest, first, to compare the frequency of the various stages of syphilis encountered. While 4,000 persons, of whom 600 had syphilis, were examined, only forty-eight were in the early stage, that is, thirteen had a chancre and thirty-five an early rash. Two of the chancre cases gave negative reactions on the first test, but subsequently they became positive. Although at this hospital there is no genito-urinary clinic, and consequently no special inducement is offered for such early cases to come, nevertheless thirteen chancres among so many cases examined during a period of two years seems rather small. This small percentage, however, is to a certain extent in keeping with the small percentage of cases in the late stages in which the patients deny an initial lesion but admit gonorrheal infection. This suggests the possibility of intra-urethral chancres which may be obscured by the pain and discharge of an acute urethritis, and also the possibility of the *Spirochaeta pallida* entering the tissues without producing any noticeable lesion and discomfort. Again the lack of a special clinic for this type of infection may explain the small number of early rashes. Still, among our patients with syphilis of the central nervous system, 75 per cent. deny any secondary manifestations at all, and 42 per cent. deny even an initial lesion. These are strong facts in favor of a routine Wassermann test, and against placing much reliance on a history of absence of infection as an aid in ruling out late syphilis.

There were 120 cases of syphilis of the central nervous system classified as follows: seventy-six cases of tabes dorsalis, fifteen of general paresis of the insane and twenty-nine of cerebrospinal syphilis. Of the latter, six were probably true syphilitic meningitis, in three of which there were over 500 cells per cubic centimeter in the spinal fluid. These 120 cases among 600 syphilitics, that is, 20 per cent., show the frequency of and tendency to involvement of the central nervous system, and would emphasize the importance of a Wassermann reaction in all neurologic cases. It is only fair to assume that a general hospital of this kind would share equally well with other hospitals in this type of syphilis, and the foregoing percentage would appear to be a fair estimate of the relative frequency of occurrence of syphilis of the central nervous system. Of the seventy-six cases of tabes, four gave a positive reaction only in the blood, fourteen gave a positive test in the spinal fluid alone, and forty gave positive reactions in both blood and spinal fluid. Fourteen patients seen in the outdoor department gave a positive blood test, but they did not enter the hospital for a lumbar puncture so that the spinal fluid was not examined. Since fourteen cases of tabes, or 18 per cent., gave a negative Wassermann reaction in the blood but a positive test in the spinal fluid, it seems quite necessary to have the latter tested. Four cases of typical tabes had negative reactions in the blood and in the spinal fluid in 1 c.c. amounts, although there was an increased cell count in the latter. Thus it would seem that a negative reaction in both blood and spinal fluid is uncommon though it occurs in tabes.

The diagnosis of congenital syphilis was made in only thirteen cases, in all of which there were some of its well recognized characteristics and a positive Wassermann reaction. Although the fact that very few children and no infants are seen at this hospital would go a long way toward explaining such a small number of congenital cases, still it might be conjectured either that some of the positive cases among adults without congenital stigmata are hereditary, or that such patients do not reach adult life or that syphilitic parents may beget healthy children. These possible explanations are based on some cases treated here. In two cases of epilepsy in young males whose epileptic attacks began at an early age, too early for a venereal source to be considered, and in a case of syphilitic meningitis in a child aged 3½ years, the patients were all relieved of their symptoms and signs by antisyphilitic treatment. These were probably congenital in origin. Furthermore, we have had several opportunities of testing the blood of infants and children who were born at the time their parents showed active lesions; but these offspring gave negative reactions and showed no congenital stigmata.

The susceptibility of the vascular system to syphilitic involvement was quite evident. Among the 600 positive cases there were fifty-six cases with vascular involvement, a percentage of 9.3. Aortitis, accompanied usually by an aortic insufficiency, was the most common condition; there were twenty-three of these. Aneurysm was next most frequent, with eighteen cases. Dilatation of the arch of the aorta with aortic insufficiency was next in frequency, with thirteen cases. Of uncomplicated arteriosclerosis there were only two cases with positive Wassermann reactions. The cases of nephritis with hypertension will be discussed later on; but it may be noted here that their number would raise the percentage of vascular involvement to 10 per cent.

The eighteen cases diagnosed aneurysm were verified by the Roentgen ray, and in all there were positive reactions in the blood. Two other cases with negative reactions were diagnosed clinically as aneurysm. One of these, however, was subsequently shown to be cancer of the esophagus. The other case may likewise turn out to be other than aneurysm, as the chances are 18 to 1 that it is not aneurysm. On the other hand, there were twelve cases of dilated aortic arch with a negative Wassermann reaction, against thirteen such cases with a positive reaction. From the foregoing statement one might conclude that it was unusual for nonsyphilitic dilatation of the aorta barring traumatism to progress to aneurysm formation, whereas dilatation of the aorta caused by syphilis very likely does progress to aneurysm, and antisyphilitic treatment is indicated to prevent further progress. In this series there was only one case of aneurysm of the abdominal aorta, and the blood gave a positive reaction; this aneurysm ruptured, and the diagnosis was confirmed at necropsy. One case showed an aneurysm of the popliteal artery, and the blood gave a positive reaction; there was no history of injury.

Including the cases of aortic insufficiency associated with an aortitis and with a dilated aorta, there were twice as many cases of aortic insufficiency with a positive as with a negative Wassermann reaction; but in all the other valvular lesions together, the Wassermann reaction was negative with two exceptions. The heart itself in this series of cases escaped without syphilitic involvement, with the exception of one case of paroxysmal tachycardia. This disturbance was probably due to syphilitic disease in the heart muscle, since the attacks were inhibited by salvarsan No cases of uncomplicated chronic myocarditis gave a positive Wassermann reaction

Several observers have asserted that pulmonary tuberculosis often gives a positive Wassermann reaction In this series there were ninety cases of outspoken pulmonary tuberculosis, and only three of these had positive Wassermann reactions All the cases of tuberculous meningitis gave a negative test in both blood and spinal fluid It would seem from this series, therefore, that there is little evidence for the conclusion that tuberculosis may cause a positive Wassermann reaction There was one case in our series of probable lung syphilis, since the pulmonary signs and symptoms rapidly cleared up under salvarsan, mercury and potassium iodid

In thirty-two cases of cirrhosis of the liver, there were six with a positive Wassermann reaction, and in fifteen cases of acute catarrhal jaundice there were no cases giving complete fixation, although one case gave 75 per cent fixation at the height of the disease, but this fixation gradually diminished in strength as the jaundice diminished in intensity A week after the first test there was 50 per cent fixation, a week later still there was 25 per cent fixation, and when the skin and mucous membrane had become clear, there was no fixation at all Since bile is known to vary in its cholesterin content, it is possible in this case showing partial fixation that there was a large cholesterin content in the bile, sufficient to give this partial fixation We do not feel, however, that bile complicates the interpretation of the Wassermann reaction to any great extent In this series we encountered gummas of the liver in only four cases, and all yielded readily to antisyphilitic treatment

Among the cases of syphilis showing involvement of the alimentary tract, omitting from consideration those with gumma of the tongue, of which there were four, and cases of stricture of the rectum, of which, strangely enough, only one was encountered in this series, three cases were seen which showed unusual clinical pictures Two of these closely resembled gastric ulcer, one patient, in fact, was operated on for this condition without any definite findings at operation, the other case cleared up quickly with antisyphilitic treatment The third patient showed definite ulcerations of the lower colon and upper rectum by proctoscope, with typical symptoms and stool findings of an extreme colitis, and was so greatly benefited by antisyphilitic treatment that he has continued practically free from symptoms for more than a year without further treatment This case is to be reported in detail in a subsequent paper

Several observers have asserted that syphilis plays an important part in the etiology of chronic nephritis with hypertension [2] These adherents, however, base the greater part of their proof on the luetin reaction It has been claimed recently that the administration of potassium iodid provokes a positive luetin[3] reaction, and probably the number of patients with hypertension not having been given potassium iodid is very small In this series there were 120 cases of chronic nephritis with hypertension, and only seven of these gave positive Wassermann reaction Among ninety-three cases of chronic nephritis without high blood pressure, there were three having positive Wassermann reactions These statistics do not support to any great extent the theory that hypertensive nephritis can be attributed to syphilis In this series there were no cases of syphilis of the kidney

The incidence of a positive Wassermann reaction in cases of diabetes mellitus is interesting Among eighty-nine cases of diabetes there were seven with positive Wassermann reactions The majority of these seven cases gave a history of syphilitic infection One case in particular is of sufficient interest to mention Six months after a chancre and a secondary rash, this patient developed diabetes He was treated with mercury and potassium iodid for one year, and then for six months with salvarsan and mercury without any influence on the diabetes The blood Wassermann, however, became much weaker but never negative The patient finally died in coma Other parallel cases have been observed Many observers have noted the frequency of a positive Wassermann reaction in this disease, and some have considered it due to the presence of acidosis in the serum On repeated tests under various conditions, the Wassermann reaction was noted by us to be uninfluenced whether there was much or little sugar in the blood and urine, and whether or not the patient was in coma

Of special interest in regard to treatment and relief of symptoms was the frequency of a positive Wassermann reaction among patients with epilepsy In the eighty-eight cases of epilepsy there were ten cases with a positive Wassermann reaction, and of the seventy-eight with a negative reaction, seventeen had an old depressed fracture of the skull which accounted for the disease in these cases Subtracting the seventeen fracture cases from the total of eighty-eight would leave 14 per cent having positive Wassermann reactions and without other known etiology for the epileptic seizures Three of the patients with positive reactions were treated with salvarsan, and have had no attacks for over a year since discontinuing the treatments The other patients were treated with mercury intramuscularly, and the attacks were relieved while under observation Therefore it seems that syphilis is a frequent cause of epilepsy This statement is further substantiated by the fact that in three of the thirteen cases of congenital syphilis observed in children there were epileptiform seizures, these three cases are not included in the list of epilepsy, but are grouped under the heading of congenital syphilis In thirty-five of the cases of epilepsy, including those with a positive Wassermann in the blood, lumbar punctures were done, the spinal fluid in every case gave a negative Wassermann reaction and a normal cell count, the colloidal gold reaction was slightly positive in Tubes 2, 3 or 4, but no tubes were more than three plus It might be stated that although 0 1 c c of blood serum gave a positive fixation in these cases, less than 0 1 c c frequently gave no fixation, and furthermore, some of these positive reactions were changed to negative by a few mercury injections or three or four salvarsan treatments, but this negative reaction was not permanent after so little treatment For these reasons we believe that most of these cases of syphilitic epilepsy would be entirely missed in doing reactions with any of the less sensitive antigens

Thinking of the possibility of pneumonia at the height of the febrile period giving a false positive reaction, we judged it worth while to consider in detail this group of cases Weekly positive reactions we considered a possible complication because of the micro-organisms present not only in the lungs but also in the blood stream In addition, it seemed that serum infected with the pneumococcus of varying type might be altered biologically even after removal from the body, if allowed to stand for a few days Eighty cases in this series were diagnosed pneumonia, of these, nine gave positive reactions Three patients admitted syphilitic infection, another case was one of congenital syphilis showing very definite stigmata One gave a positive reaction on repeated examination three weeks after becoming fever free Two cases gave ++++ reactions, only 0 003 c c of serum being used One patient admitted exposure only He was markedly alcoholic and died two days after admission, so that repetition was not possible The only female in the series had had two premature births at seven months, with death in both instances The last two cases are the only ones in a total of eighty in which there is the least doubt about the correctness of the reaction, and these we consider more than probably syphilitic

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[2] Stoll, H F The Syphilis We See But Do Not Recognize, and the Importance of Familial Studies, Boston Med and Surg Jour, 1915, clxxiii, 608

[3] Sherrick, J W The Effect of Potassium Iodid on the Luetin Reaction, The Journal A M A, July 1, 1915, p 404

In this series there were forty-five cases of typhoid fever with only one positive reaction, which was found in a child having typical hutchinsonian teeth Sixteen cases of scarlet fever were tested while at the height of the rash and the febrile period In none of these was the slightest fixation noted, which is strikingly at variance with a rather widespread belief that this disease often causes a positive Wassermann reaction

Occasionally the statement is made that syphilis of the bones does not give a positive Wassermann reaction The blood in fifty-seven cases of disease of the bones was tested, twenty-nine gave a positive reaction, and twenty-seven gave a negative reaction Of the twenty-nine positive cases, twenty-six were diagnosed periostitis and three gumma, and all of these twenty-nine cases readily cleared up under antisyphilitic treatment Of the twenty-seven negative cases, operation was performed in twenty, and no evidence of syphilis was found, the usual diagnosis at operation was osteomyelitis, with a few instances of tuberculosis, and two instances of neoplasm In the remaining seven negative cases a diagnosis of traumatic periostitis was made in four and chronic osteomyelitis in three, nevertheless all of these seven patients were given antisyphilitic treatment without any benefit Therefore it would appear that syphilis of bone is not an exception to the rule but that it, like syphilis of other tissues, gives a positive Wassermann reaction

It seems of interest to determine the percentages of positive cases in these patients in whom syphilis was not diagnosed without the aid of the Wassermann reaction In order to do this it was necessary to take into consideration only those patients on the medical and the neurologic services on whom routine tests were made, and to exclude all of those patients in whom a diagnosis of syphilis had been made previous to admission to the wards Among 1,700 medical cases, there were 203, or 12 per cent, having a positive Wassermann reaction The present illness in all of these cases was not due to syphilis However, it is surprising how frequently the positive Wassermann reaction did clear up the diagnosis and show the way to proper therapy On the neurologic service among 350 consecutive cases, 8 per cent had a positive Wassermann, and in all of these twenty-seven positive cases, the lesion was due to syphilis, although none were so diagnosed before entrance to the hospital In these positive cases the following diagnoses were made in the wards three epilepsy, two general paresis, two periostitis of skull, seven cerebrospinal syphilis, one pituitary disease, four trigeminal neuralgia, five cerebral syphilis, two tabes dorsalis and one internal hydrocephalus

CONCLUSIONS

1 Syphilis is even more prevalent than ordinarily supposed

2 A routine Wassermann test is of the greatest value in a general hospital

3 Neurologic cases should always be tested, and particularly all cases of epilepsy

4 Cases of unsuspected syphilis greatly outnumber those frankly syphilitic among patients applying for treatment in a general hospital

5 The common infectious diseases — typhoid fever, pneumonia, tuberculosis and scarlet fever — have no influence toward causing falsely positive reactions

6 We find no argument in favor of a belief that chronic nephritis with or without hypertension is due to syphilis

7 Diabetics in our series showed a fairly high percentage of positive reactions, and in one or two cases the coincidence of this disease and the onset of diabetic symptoms was suggestive but in no way conclusive

8 The well-known affinity of the *Spirochaeta pallida* for vascular and nervous tissues is most marked, and it is unfortunate that the early lesions in the disease are so slight as to be so often unnoticed and consequently untreated at this time, when later and more serious lesions could be prevented

9 Syphilis of the liver presents a most difficult problem in differential diagnosis The presence of icterus should make one wary of the interpretation of any but strongly positive tests

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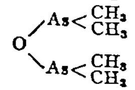
ALLIACEOUS ODOR PRODUCED BY IRON CACODYLATE

DOUGLASS W MONTGOMERY, M D

SAN FRANCISCO

When given by the mouth, the cacodylates may taint the breath, skin and urine with a strong garlicky odor To avoid this disagreeable contingency, it is advised to administer them hypodermically Nevertheless, even when given in this manner, they may, although infrequently, occasion the same disagreeable smell A girl, aged 20, under treatment for an eczema on an ichthyotic base for a marked anemia, was given in all five doses of 1 grain each of iron cacodylate A few minutes after each dose the taint was noticeable to such an extent as to interfere with her work as assistant to a dentist The administration of the drug had to be deferred till the late afternoon, so that the effect might wear off by morning

The strong, disagreeable odor is due to the formation of cacodyl oxid, a substance composed of two cacodyl groups bound by one oxygen atom



$$O\begin{matrix}\diagup As<\begin{matrix}CH_3\\CH_3\end{matrix}\\ \diagdown As<\begin{matrix}CH_3\\CH_3\end{matrix}\end{matrix}$$

This substance is also formed with the emission of nauseating fumes, when cacodyl is exposed to the air

CACODYL

Cadet de Gassicourt (1731-1799) was the first, in 1760, to make what is now known as cacodyl, and which for long was called the fuming liquid of Cadet (liqueur fumante de Cadet), a colorless liquid, of most disgusting odor, which gives off a highly poisonous vapor which readily catches fire in the air at ordinary temperature, and forms the above-mentioned oxid Cadet was the contemporary and friend of Lavoisier (1743-1794), the genius who, with Priestly (1733-1804), shares the glory of founding modern physiology Bunsen (1811-1899) originated the present name, cacodyl, and by it one may get some inkling of the odor of this substance The word has three roots cac-od-yl Cac- signifies vile, -od, emitting odor, and -yl, substance, the substance emitting a vile odor

Our forefathers imagined sulphur compounds to be the worst smelling things, and so, in creating a hell, plentifully supplied it with them In comparison, however, with the productions of the modern chemists, the sulphur compounds of our forefathers are as attar of roses, and from this one may imagine what a substance must smell like, when a chemist such as Bunsen would feel impelled to baptize it with the name cacodyl

Each arsenic atom in cacodyl is in very firm combination with two methyls, $-\mathrm{As}<^{\mathrm{CH_3}}_{\mathrm{CH_3}}$, so that they act in chemical reactions like a single element, stepping in and out of combinations as an independent group, so that chemists formerly gave to this group a symbol, Kd It is this firm binding of the arsenic that makes the cacodylates so much less poisonous than arsenous acid, $\mathrm{As_2O_3}$, and potassium arsenite, $\mathrm{K_3AsO_3}$ In cacodyl the arsenic is trivalent, and it is the free valency shown in the formula given above that reaches out so avariciously for oxygen as to cause it to spring into flame when exposed in the open air

Just what happens when sodium cacodylate is taken by the mouth or what happened in the instance referred to above when iron cacodylate was administered hypodermically is not known, but it may be surmised that by the chemistry of the body the sodium in the one case and the iron in the other is split off, and that by further action the two oxygens are also separated from the tightly joined cacodyl group, $-\mathrm{As}<^{\mathrm{CH_3}}_{\mathrm{CH_3}}$ This cacodyl, on coming in contact with the oxygen of the inspired air, or that on the skin, or that in the urine, in voidance, gives rise to the malodorous fumes that suggested its first name, the fuming liquor of Cadet As these fumes are very poisonous, the quantity is very small, although its presence is very obtrusive Why this should occur only occasionally, and why it is more frequent, as Martinet says, when given by the digestive tract and in children rather than in those who are older, is not known[1] It may be reasonably surmised that the opportunities for oxidation are increased in the slower absorption and intricate chemistry of the alimentary tube, and it may further be conjectured that in youth the opportunities for swift oxidation in the body itself are greater than in mature years It may, however, also occur in elderly persons, as shown in the case of a man, aged over 70, whom I once treated with salvarsan and mercury for an old syphilis For a profound anemia he was given iron cacodylate, which caused an arsenical cutaneous pigmentation Later he was given a still more vigorous course, which occasioned a reappearance of the pigmentation and the occurrence of an alliaceous odor of the breath

In both these instances and in another occurring in the practice of a friend, iron cacodylate, not sodium cacodylate, was employed Theoretically there is more cacodyl in iron cacodylate than in sodium cacodylate Cacodylic acid radical is univalent and so is sodium, and the formula would run $\mathrm{(CH_3)_2AsO_2Na}$ In iron cacodylate, however, the iron is trivalent, so that three of the cacodylate group are contained in one molecule of iron cacodylate as against one of the cacodylate group in sodium cacodylate $\mathrm{[(CH_3)_2AsO_2]_3Fe}$ Probably, however, the determining factor in the foregoing reaction is the great friendliness or affinity between iron and oxygen, enabling the oxygen of the body readily to split off the iron, and so initiate the breakdown in the molecule that eventuates in the formation of enough cacodyl to be appreciated on the breath

323 Geary Street

DERMATITIS HERPETIFORMIS

REPORT OF SOME CASES TREATED WITH EMETIN *

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AND
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That dermatitis herpetiformis is the indication in certain skins of a general toxemia is generally conceded Some years ago, one of us (Engman) reported a series of cases in relation to indicanuria, and stated that in certain instances intestinal putrefaction undoubtedly was an etiologic factor This has been demonstrated to our satisfaction therapeutically by the control of certain cases of the disease under a careful nonprotein diet Tobacco and its excessive use have proved to be the source of toxemia in other cases, either through the direct effect of nicotin or through its influence on metabolism

Each case of dermatitis herpetiformis is, therefore, a study in itself in the search for the source of the toxemia Realizing this fact, we have been paying special attention to the mouth in this disease Since the etiologic importance of infections emanating from this source has been so prominently brought before the profession by various writers, we have tried to exclude mouth conditions in the study of the disease In cases in which pyorrhea alveolaris, ulcerated gums or pus cavities about the gums were present, they were treated by dental surgery Where the endameba was found, emetin (alkaloid) was used hypodermically, according to the usual procedure We believe, therefore, that the study of the following cases is interesting and important in that they undoubtedly show that suppurative conditions about the teeth and gums may be of marked etiologic importance in dermatitis herpetiformis

We do not wish to convey the impression that emetin is a specific for dermatitis herpetiformis It will probably improve only those cases in which it is indicated, namely, in the specific inflammation about the gums and teeth, due to the endameba, which is probably an etiologic factor in a certain percentage of cases of dermatitis herpetiformis Besides the injection of emetin, the condition of the mouth should be locally treated by an accomplished dentist

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[1] Martinet, Alfred Les médicaments usuels, Paris, 1909, p 61

* From the Barnard Free Skin and Cancer Hospital

CASE REPORTS

Case 1—A farmer, aged 50, admitted Jan 4, 1915, had had chill and nausea, five weeks before, but no fever Then a papulovesicular eruption developed on the arms, legs, body and nape Later the eruption became papulopustular and very itchy It showed a grouping tendency Dermatitis herpetiformis was diagnosed The patient was constipated nervous, and there was nocturnal urination There was pyorrhea of both upper and lower teeth The gums were soft and swollen, and bled easily The endameba was found There was slight emphysema of the lungs The heart was negative. The spleen and kidneys were not palpable, a mass was felt in the region of the gallbladder The stomach was not dilated Large varicosities extended upward from the external saphenous of both sides over and above the symphysis to meet in the midline There were numerous telangiectases over the lower abdomen The stool was negative as to parasites The blood and urine were normal, the indican not increased

The patient was put on a vegetable diet and laxatives A local antipruritic lotion was employed Veronal, 5 grains, was given at bedtime No relief was obtained in one week

Antipruritic salve was used, and desiccated thyroid gland, 1½ grains, three times a day There was slightly less itching and there were no new lesions, after the second week The itching was as severe as ever after the third week The lotion and the salve were stopped, and cornstarch used A colloid bath was given every second day There was no improvement after five days

A preparation of the thyroid gland was given for three weeks There was no cutaneous improvement, except less itching at night and the patient slept better An intercurrent attack of boils was cured by staphylococcus vaccine, which had no effect, however, on the dermatitis herpetiformis Emetin hydrochlorid, one-half grain, was begun on the patient's forty-ninth day in the hospital Immediate and rapid improvement of the skin and the pyorrhea followed The itching ceased after the first dose. The skin was clear There was no itching The patient was discharged cured after one week.

Case 2—A shoe worker, aged 34, has had slight pyorrhea five years, and dermatitis herpetiformis two years There was a fine papular eruption on the body, arms and legs, very itchy Physical examination was negative One year previously the patient had been given treatment by vegetable diet and arsenic internally, no improvement

Emetin hydrochlorid, one-half grain daily for six doses, was given The skin and teeth were practically well after six injections The patient was discharged cured after twelve days There was slight recurrence after three weeks The patient disappeared

Case 3—The patient, aged 60, with no occupation, had had dermatitis herpetiformis and pyorrhea alveolaris for ten years The eruption was generalized, grouped, itchy and intermittent, and papular vesicles were always present somewhere Physical examination revealed the patient as normal except that the liver was slightly enlarged The urine showed a trace of albumin, and also pus The blood was normal Emetin hydrochlorid, one-half grain, was given for six doses The itching was much improved and all lesions involuted after four doses All lesions were gone after six doses The patient was discharged after three weeks, cured There was no pyorrhea

Case 4—Man, aged 52, with no occupation, entered the hospital July 1, 1913 Dermatitis herpetiformis was diagnosed There was a general vesicopustular, very itchy, grouped eruption The patient had had it for two years He was put on a vegetable diet and given hypodermic injections of sodium cacodylate, three-fourths grain, daily The patient was discharged cured in two weeks

He entered the hospital a second time, Oct. 10, 1914 There had been a severe recurrence for eight or nine months, and he had been treated with staphylococcic vaccines during part of this time at another hospital with no results He showed on entrance the same eruption as in July, 1913 It was very extensive and itchy, and the pustular aspect was especially marked The patient was also suffering from pyorrhea alveolaris The endameba was found He was put immediately on sodium cacodylate injections, with little or no result He developed acute nephritis with severe albuminuria and plentiful granular casts, sodium cacodylate, therefore, had to be given cautiously, but on milk diet, a tolerance to the drug in three-fourths grain doses was established No effect, however, on the dermatitis herpetiformis was noted Vegetable diet, a preparation of the thyroid gland and various local applications were used over long periods without avail The albumin after three months was reduced to a trace, and casts disappeared from the urine Emetin hydrochlorid, one-half grain, was given daily from March 5 to March 10, 1915 Marked improvement in the pyorrhea and the eruption began at once After two weeks only a few lesions were left on the body but quite a number persisted in the beard, where the eruption was wholly pustular April 3, there was a general recurrence over the body and legs, and a second course of emetin injections was given Steady but slower improvement resulted, the lesions on body and limbs disappearing in six weeks, leaving only the eruption in the beard, which gradually grew less, but there were still a few lesions there when the patient left the hospital three months after the last course of emetin There were no casts and only a trace of albumin in the urine when the patient was discharged No amebas were present He was practically well

THE SIGNIFICANCE OF CERTAIN ROENTGENOGRAPHIC FINDINGS IN THE GASTRO-INTESTINAL TRACT *

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The observations recorded in this paper were made on a series of fifty gastro-intestinal cases studied by all the usual clinical methods, including roentgenograms following a bismuth meal The results throw some new light on the significance of certain roentgenographic findings

The clinical examination and the roentgenographic plates were made, notes were recorded both on these findings and the operative or necropsy reports at separate times Diagnoses as complete as possible were made previous to operation or necropsy Afterward twenty-four of the patients were operated on, thus providing a certain check on the accuracy of the ray diagnosis Although the other twenty-six patients were not operated on, their subsequent histories, response to treatment or necropsy reports give a partial check on the accuracy of the diagnosis The study of the plates was completed and the diagnosis made before operation, treatment, subsequent history, or necropsy reports had been made So these had no influence on the diagnosis

The results are especially instructive when arranged according to certain findings, instead of according to cases That is, for example, when all cases showing what might well be called persistently infraposed stomach are arranged together, it indicates the significance of that finding, or when all cases showing supraposed stomach are studied together, it reveals the significance of that finding The main results of such a study are presented below

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* Read before the Allegheny County Medical Society October, 1915, Meeting

* From the Department of Internal Medicine Laboratory of Roentgenology of the South Side Hospital

The roentgenograms were taken with the patient in the standing position Normally the position of the stomach seems to vary a good deal Fluoroscopic examination of the stomach has confirmed this view The stomach has been directly observed to move up and down It also is seen to move synchronously with the movements of the diaphragm in respiration, especially in children

In thirty-six of the cases in this series the stomach had the ability to change its position without the aid of a change of posture of the patient The first plate was taken immediately after the bismuth meal, and it normally showed the lesser curvature at or slightly below the umbilicus The second plate was taken thirty minutes after the taking of the bismuth meal The plate normally shows the entire stomach above the umbilicus

Nine of the remaining fourteen cases showed the entire stomach to be *persistently above the umbilicus* Of these nine cases three patients were operated on, one showing cholecystitis with adhesions and chronic appendicitis, another showed carcinoma of the lesser curvature, the third showed a vicious circle following a previous gastro-enterostomy The remaining six cases were diagnosed with probable accuracy by clinical and laboratory reports, subsequent history, and results of treatment as follows three cases, syphilis of the stomach, one, chronic appendicitis, one, chronic cholecystitis, and one showed a well-marked loop in the descending colon

The other five remaining of the fourteen cases showed the stomach persistently below the umbilicus Four of these cases at operation showed as follows one case of carcinoma, three cases of simple ptosis The other remaining patient was not operated on, but the condition was diagnosed with probable accuracy as vertical stomach with chronic appendicitis In this case the pylorus was persistently below the umbilicus, while the fundus was high in the epigastric region

Normally the stomach varies in size and form even more than it does in position In this short note no attempt will be made to discuss these normal variations extensively, except to point out that there are great alterations according to the length of the mesentery of the stomach and intestines, which depends on the extent of extragastric adhesions, the muscular tonus of the stomach and esophagus, the character of the nerve supply to these structures, which depends largely on the mental state of the individual, and finally, intra-abdominal pressure changes due to muscular contraction of the diaphragm and abdominal muscles Any disease such as syphilitic or gummatous myositis of the muscular coat of the stomach, syphilitic alterations of the nervous system, various infections of extragastric organs, and secondary changes in the general constitution of the individual such as anemia, inanition, etc , due to any chronic infection or toxemia, can interfere with this normal variation in size, shape, and position of the stomach by their effect on one or all of the factors concerned Numerous abnormal forms have been described such as fish-hook, water-trap, hourglass, etc These various forms are thought to be significant For example, spasmodic hourglass stomach indicates slight or acute ulcer, or else it means abnormally marked peristaltic action, while persistent hourglass stomach indicates chronic ulcer with cicatricial contraction

As mentioned above, normally the stomach varies greatly in size When empty it has been seen by direct inspection to contract down to the size of a rope The antrum is especially liable to contract in this way during operation Therefore, unless the stomach is persistently enlarged one is not justified in making a diagnosis of chronic dilatation Likewise, one is not justified in making a diagnosis of infraposed or supraposed stomach unless the *entire stomach is persistently* below or above the umbilicus

Persistent incisures are most frequently due to local cicatricial contraction following chronic ulcers Continued spasmodic contractions are most frequently due to acute ulcers or gastric adhesions

Temporary incisures or diverticuli are most frequently due to normal peristaltic waves They are best seen by fluoroscopic examinations or by rapidly succeeding plates, by means of which their significance as regards duodenal or gastric ulcer can be determined Persistent diverticuli are most frequently due to deep ulcers

Normally the stomach should be empty in less than six hours The cecum should be filled by eight or ten hours, and empty by twelve The whole bismuth meal should be passed in thirty-six or forty-eight hours

In this series of fifty cases twenty-eight showed six hour retention, which varied from a small amount to nearly the whole bismuth meal The retention persisted in two cases till seventy-two hours

Of these twenty-eight cases showing gastric retention, twenty presented a slight retention after six hours, one showed eight-hour retention, two cases had forty-eight-hour retention, two showed seventy-two-hour retention, and three cases twenty-four-hour retention

Of the twenty cases showing slight retention, ten patients were operated on All of these save three showed chronic appendicitis These three showed as follows two cases of pyloric stenosis due to intragastric cicatricial contraction, one case presented ptosis of the colon and gallstones The remaining seven cases presented, together with chronic appendicitis, the following three cases, unmixed chronic appendicitis, one case, chronic appendicitis, pyloric stenosis, movable kidney, and rectocystocele, one patient had chronic appendicitis and adhesion of the omentum to the cecum and the ascending colon, one presented chronic appendicitis and pyloric stenosis, and one had persistent hourglass stomach and chronic appendicitis

The remaining ten cases which showed slight retention but in which there was no operation were diagnosed by clinical examination, subsequent history and results of treatment as follows syphilis, thyroidism, rheumatism with focal infection in the appendix, two cases of chronic appendicitis with ptosis of the stomach and intestines, one case of chronic appendicitis, and one case of typhlitis and megacecum One case each of syphilis, thyroidism, rheumatism, typhlitis and megacecum, and chronic cholecystitis, five cases of chronic appendicitis of which two showed also ptosis of the stomach and intestines, two others of which showed also chronic constipation

The single case which showed eight-hour retention at operation presented results of a previous gastro-enterostomy and appendectomy Of the three cases showing twenty-four-hour retention, one patient showed at operation a carcinoma of the lesser curvature of the stomach and esophagus The other two patients were not operated on but the cases were diagnosed as carcinoma of the stomach Of the two cases showing forty-eight-hour retention, both patients were operated on, one showing chronic appendicitis, chronic cholecystitis with gallstones, the other carcinoma of the stomach

In the two cases showing seventy-two-hour retention, one patient when operated on presented carcinoma of the stomach, and the other was diagnosed clinically and confirmed at necropsy as carcinoma of the stomach

In the remaining twenty-two cases in which the stomach was empty in less than six hours, nine patients were operated on and diagnosed as follows one case, duodenal ulcer and chronic appendicitis, one case, salpingitis, two cases, chronic cholecystitis with chronic appendicitis, one presented an adhesion between the stomach and an old abdominal scar, one, Lane kink of the ileum, one, simple acute duodenal ulcer in which the stomach was empty in two hours, one, enteroptosis and perineal tear, one, cancer of the liver

The remaining thirteen patients in whom the stomach emptied in less than six hours were not operated on, but their cases were diagnosed clinically as follows two cases, syphilis, one case, slight chronic appendicitis, one case, secondary anemia with red blood cell count of 1,000,000, three cases, slight chronic appendicitis, the remaining six presented practically normal roentgenograms

The duodenum has become a very interesting part of the gastro-intestinal tract, because of the frequency of ulcer in various stages beyond the pyloric sphincter Recently, the duodenal cap or bulb has received much attention because of the characteristic outline it shows in roentgenograms Any distortion of this outline is considered significant of a lesion in the walls of the duodenum, even within the duodenum, such as ulcer, or without the duodenum, such as adhesions

It is possible that in this portion of the duodenum ulcers may exist which are of such a slight extent that they cannot influence the outline of the duodenal cap For this reason one negative roentgenogram is not sufficient to prove the absence of a lesion in the duodenum If a deformity of this cap does not appear, it is not conclusive evidence that a very slight ulcer, or multiple slight ulcers, may not exist. Other clinical signs have to be taken into consideration in making a diagnosis

The remainder of the duodenum is not very satisfactorily shown in roentgenograms So it is hard to arrive at a conclusion in roentgenologic study of this part of the duodenum Therefore, it is possible to have ulcers existing in the duodenum which cannot be demonstrated by the ray

Hyperperistalsis is also considered evidence of an irritating lesion in the duodenum

The position of the jejunum, ileum and large intestine varies much the same as does the stomach, and depends on the factors mentioned before, which govern the position of the stomach

Lesions of the jejunum must be rare inasmuch as very few cases have been observed in which chronic local pathology existed in the jejunum, and roentgenologic study of this portion of the intestinal tract has not thrown any more light on it up to the present.

Lane's kink of the ileum has recently received much attention In two cases in this series it was demonstrated by ray One of these patients was operated on, and operation confirmed the roentgenologic diagnosis

Incompetency of the ileocecal valve, which has been noticed by a number of observers, can be demonstrated by ray, but its clinical importance has not as yet been ascertained

The cecum has been observed in various positions, depending on the same influences which alter the position of other abdominal structures

Normally it lies in the right iliac fossa, but has been observed as low down as in the pelvis or as high as the umbilicus Its altered position has various diagnostic possibilities, but as a rule it indicates adhesions to pelvic organs or other abdominal structures

Bismuth retention in the cecum for more than eighteen hours is evidence of atony of the muscular walls, chronic inflammatory conditions of the peritoneal covering, chronic appendicitis, or extracecal adhesions Atony can be determined by general observation of the rate of movement of the bismuth throughout the gastro-intestinal tract

Nine patients in this series operated on proved to have chronic appendicitis either alone or in combination with some other lesion All of these patients showed retention in the cecum varying from twenty-four to seventy-two hours

The position of the colon also varied, depending on the factors mentioned before This has various diagnostic possibilities which can be readily seen from a general study of the gastro-intestinal tract.

Alterations in the position of the hepatic and splenic flexures are usually due to peritoneal adhesions, and signify inflammatory conditions in these regions

Angulations also occurred, and were usually due to relaxed or elongated mesentery or scar tissue within the large intestine at the point of angulation

SUMMARY

Normally the stomach can change its position without the help of alteration in body posture When this mobility of the stomach is lacking it is either due to restraining forces which prevent the movement, or else to lack of power to move The former is the most frequent cause for lack of change of position of the stomach

Persistent supraposed stomach is due to a restraint and not to lack of power This restraint is most frequently exercised by adhesions due chiefly to cholecystitis, chronic appendicitis, traumatism (previous operation), or gastritis due to syphilis, cancer or ulcer

Persistent infraposed stomach is not as frequent as supraposed stomach It is caused by restraint or lack of power to move, most frequently lack of power, which is the case in chronic gastro-enteroptosis with relaxation of the abdominal walls

Long retention of the gastric contents (twenty-four hours or longer) is chiefly due to one cause, namely, cancer of the stomach The other chief cause is long standing chronic cholecystitis Retention for shorter time (six to twenty-four hours) has for its most frequent causes cicatricial contraction of pylorus due to healed ulcers, chronic appendicitis, chronic cholecystitis, typhlitis and syphilis

Pylorospasm does exist, but it is not always present when extragastric lesions are prevalent It probably depends on the reflex excitability of the individual's nervous system

Diagnosis made by judging from the roentgenograms, together with the history of the case and other clinical evidence obtainable, were correct in nearly every case This was demonstrated in the majority of the cases by subsequent operation or necropsy In most of the others it was shown with a satisfying degree of probability by the subsequent course of the case

Roentgenograms have revealed certain facts which can be demonstrated by other means The most prominent of these are the obstructive lesions which are as a rule located either in the pylorus of the stomach or in the region of the cecum and are usually due to definite conditions

By the use of the stomach tube in gastric analysis, fecal examinations, the charcoal test, Bastedo's test and careful analysis of clinical symptoms and physical signs, it is possible in a certain number of cases to make a very accurate diagnosis without the use of the ray In all cases which are readily diagnosed without the ray, however, roentgenograms should be taken and carefully interpreted along with laboratory tests, clinical history and physical findings, in order to obtain a clear diagnosis

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GENITO-URINARY SYMPTOMS ARISING FROM ANAL, RECTAL AND COLONIC DISEASES, AND VICE VERSA

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It is just ten years ago since a separate department devoted exclusively to the treatment of anal, rectal and colonic diseases was instituted in the San Francisco Polyclinic As this was the first clinic of its kind established west of the Mississippi River, its growth was at the beginning quite slow, since it took some time before the internists, surgeons and allied specialists recognized its value as an aid in diagnosis and treatment In recent years, however, through the cooperation of my colleagues in the different clinics, the rectal department has gradually grown until now, in point of attendance, at least, it compares most favorably with like clinics in older established institutions in Eastern cities

To the genito-urinary surgeons in particular does it seem to have been satisfactorily demonstrated that the proctoscope may be at times of valuable assistance in diagnosing some of their more puzzling cases Through their courtesy I have been enabled to observe many interesting cases in which anal, rectal and colonic symptoms have arisen from lesions in the genito-urinary tract, and, vice versa, in which symptoms apparently due to genito-urinary disease in reality were caused, either reflexly or mechanically, by pathologic conditions in the lower end of the alimentary canal

This can be readily accounted for by remembering that the origin in the spinal cord of the nerve supply to the anorectal region and to the genito-urinary tract is practically the same, and therefore any irritation of the nerve endings in the one is very likely to be reflected in the other, secondly, there is a close anatomic relationship between the two which not only makes easy any extension of inflammation or of neoplastic growth, but also allows of mechanical pressure and its consequences, and third, the venous circulation of the bladder, prostate and urethra is in very close association with the rectal plexus of veins, so that passive congestion in either set of organs may be communicated to the other

Disturbances in the act of micturition are symptoms most commonly met with by the urologist As lesions in the urinary tract which give rise to frequent, painful or difficult urination lie strictly within his domain, they will not be touched on in this paper Only those conditions in the colon, rectum or anus which, reflexly, or by direct pressure, cause these annoying symptoms will be mentioned, as they are not often considered by the general practitioner, and are not infrequently overlooked by the specialist

A quite common cause of frequent and painful urination in male adults is the pressure on the bladder and prostatic urethra by a mass of feces in a distended rectum This occurs especially when there happens to be added a severe proctitis due to the dyschesia Like symptoms are caused by pressure on the bladder by the sigmoid when it is atonic, dilated and loaded, or when it is displaced, inflamed and filled with stagnating feces This condition occurs much more frequently than is generally recognized, more especially so in women in whom a loop of the sigmoid may be held down by adhesions from a former pelvic inflammation Quite a number of these cases have come under our observation Thoroughly evacuating the colon by irrigation as a general rule brings about rapid amelioration of the vesical symptoms

Vesical irritability not uncommonly accompanies neoplasms of the rectum and sigmoid, hemorrhoids and chronic mucous colitis In the latter it may so predominate over all the other symptoms, even that of the periodic attacks of diarrhea, and there may be also such severe tenesmus, pain in the posterior urethra and tenderness over the bladder that patients not infrequently seek the advice of the urologist under the impression that their trouble is caused by disease of the prostate or bladder Treatment of the genito-urinary symptoms of course will be of no avail All therapy must be directed towards the colon before the urinary symptoms will be relieved

Ulcerative conditions in and about the anal region, such as fissures, chancres, chancroids and perianal eczemas are reflexly the cause of frequent and painful urination With fissure, in particular, the symptoms may so closely simulate those of urethral stricture that treatment has already been instituted for the latter condition before the real cause was recognized

Inability to pass urine, accompanied by frequent desire to do so, is a not infrequent complication of the presence of a hard foreign body in the anal canal Attempts to urinate are accompanied by sharp pain in the anus, but the predominating symptoms are genito-urinary, and when these organs are searched in vain for what might account for the suffering, the case becomes a puzzling one if a rectal examination be omitted

In acute proctitis, in acute dysentery and in the presence of inflamed and ulcerated hemorrhoids, there is sometimes reflex dysuria and vesical tenesmus due solely to the irritable rectal condition After operations on the rectum, and especially after a hemorrhoidectomy, inability voluntarily to void urine, and even strangury, are quite commonly met with

When there is an abscess formation about the anorectal region, the patient may have difficulty in urinating, and sometimes cannot void at all This is particularly so when the abscess is of the intermural type in which the accompanying edema probably presses on the urethra As no swelling is usually to be detected on the outside, and as there may be hardly any pain whatever in the rectal region, inability to pass urine is the main cause of complaint on the part of the sufferer.

Long retention of feces in atonic rectums of old men who also have enlarged prostates sometimes causes difficulty in micturition by adding more congestion to the already swollen gland. It is just this little added enlargement from the irritation which is caused by the fecal stasis that suffices to let the already greatly overstrained expulsive powers of the bladder fail to overcome the obstruction to the passage of the urine.

Pinworms in the rectums of children often give rise to irritability of the bladder. Nocturnal urinary incontinence frequently results from large fecal accumulations in the rectum mechanically irritating the neck of the bladder, and, in some instances perhaps, pressing on the fourth sacral nerve. Prof. Freiderich Muller of Munich has shown that, not so rarely as has been thought, a pyelitis has resulted from chronic fecal stasis and that this was in some children the cause of the nocturnal enuresis.

Cancer of the rectum is usually so insidious in its growth that an anuria may be one of the first symptoms of the disease. The anuria is caused either by mechanical pressure on the ureters or by their involvement in the cancerous growth. Constant or periodical anuria frequently complicates rectal cancer in its degenerative stage.

A syphilitic stricture of the rectum is also apt to be quite insidious in its formation, and may give rise to hardly any rectal symptoms, even though it has developed a considerable degree of constriction of the bowel. Individuals so afflicted often complain only of a slight dysuria, or of frequent urination, and on this account have been treated for a cystitis, urethritis, or urethral stricture before a rectal examination disclosed the real trouble.

Abnormalities in the urine, resulting from colonic conditions solely, are occasionally met with. That hematuria may be due to an intestinal toxemia accompanying a torpid condition of the large bowel is perhaps rarely thought of by the urologist. The renal hemorrhage may follow a hematogenous bacterial infection in the kidney, generally from a bacillus coli activity. A mercurial laxative, together with thorough colonic irrigations and a nonprotein diet, usually controls the symptoms by lessening the toxemia.

Albumin and even casts have been occasionally seen in the urine of persons with acute and chronic intestinal stasis or enteritis. These abnormalities in the urine may be evidence of simple renal irritation due to the excessive elimination of indican. These cases so resemble nephritis that they have been so diagnosed in some instances. Individuals having this condition usually claim they are not constipated and say that they have a daily bowel movement, yet a proctoscopic examination often shows the upper rectum and sigmoid filled with balls of feces. By a routine examination for indican it will be found many times when not expected.

Transparietal infection through the lymphatics from the intestine may be the cause of a cystitis. This has been observed to follow appendicitis, dysentery and internal hemorrhoids. The bladder may also be infected by the colon bacillus from a rectum or sigmoid chronically distended by feces.

Pyelitis is not at all a rare complication of fecal stasis, in elderly women and in children especially, as the kidneys, particularly the right, which is most often affected, are in intimate contact with the flexures of the colon. The renal pelves become infected by the *Bacillus coli communis* which passes from the intestines at those points where there is a coprostasis. All the symptoms from the pyelitis are greatly relieved when the source of infection in the bowel is removed by high colonic irrigations. Granville MacGowan has reported cases in which he observed "the tide of colon bacilli rise and fall in the urine according to the neglect or care that was bestowed on the bowels."

At this point I would digress for a moment to say that I think the so-called high colonic irrigation, as given in our hospitals, is of very little value. It is usually administered by the nurse through a soft colonic tube which, no matter how far it appears to be introduced up the bowel, simply coils on itself and very rarely passes by the rectosigmoidal valve. As a consequence the irrigating fluid rapidly dilates the rectum, and while a part flows onward into the upper colon the remainder causes such a painful and urgent desire immediately to evacuate the rectum that the purpose of the irrigation is defeated. The proper way is to put the fluid directly into the sigmoid. This can be done by introducing a Wales bougie through a proctoscope which has been passed by sight over the valve of O'Bierne into the pelvic colon. It is then remarkable how much fluid can be retained by the patient without experiencing any discomfort whatever.

Spermatorrhea, with prolonged and annoying erections, and accompanied by frequency of urination, coming on especially after the sufferer is warm in bed, may be the result of the presence of a large fecal accumulation in the rectum and sigmoid. These symptoms occur usually in individuals of a highly nervous temperament, and are partly reflex in nature and partly due to direct pressure of the fecal mass on the third and fourth sacral nerves. A young man suffering from these symptoms in a most aggravated form was referred to me recently by a genito-urinary surgeon who had made a thorough examination of the genito-urinary organs without being able to find anything to account for the condition. As the patient gave a history of some rectal trouble a few years previously, an examination of the anorectal region was requested. There was found a pronounced spasmodic condition of the sphincters ani, a well-marked intestinal stasis, and the presence of scar tissue from a former operation in the anal canal. Gradual and regular dilatation of the sphincters, together with high colonic irrigation, restored the patient to good health.

In the female, masturbation is often caused by a pruritus or other abnormal sensitiveness arising from prolonged retention of a fecal mass in the rectum and sigmoid, which presses on the nerves and veins, and so produces congestion in the genital parts. Pain after coitus may be due to the presence of hemorrhoids, especially when they are inflamed and ulcerated. Impotence following on their removal has been observed by me in a man in whom it was probably brought about by the pain in the anus, from sphincteric contraction on the scars, which he felt at the time of intercourse. The fear of pain brought on a psychic impotence.

Varicocele may be caused sometimes by large fecal accumulations in the rectum obstructing the venous circulation.

An enlargement of the inguinal glands occurs with chancre of the anus When these glands are infiltrated without apparent cause the anal region should always be examined Chancre of the anus occurs more frequently than is generally supposed, and individuals so afflicted go to make up a large part of those patients who, having secondary or tertiary syphilis, strenuously, yet honestly, deny any knowledge of ever having contracted the disease

The inguinal glands also become infiltrated during the progress of cancer of the rectum which is encroaching on the anus

Those anal, rectal and colonic symptoms and conditions which arise from affections of the genito-urinary tract will now be considered

A not uncommon condition encountered is constipation in old men, resulting from an enlarged prostate which impedes the expulsion of feces from the rectum To the mechanical obstruction there is added the inflammatory action on the rectal mucosa from the irritating presence of the enlarged gland, so that as a consequence the feces become dry, hard and perhaps scybalous

Pain from disease of the bladder, prostate and seminal vesicles, from colic caused by passage of a renal calculus, or from contusion, inflammation or torsion of the testicles, may, by reflexly inhibiting peristalsis, be a cause of intestinal stasis

Stricture and other urethral lesions, and stone in the bladder, may, by giving rise to reflex spasms of the sphincter ani muscles, cause hypertrophy of these muscles, and this results in constipation

I have observed several cases of enlargement of the prostate, in which there was some slight incontinence of feces, particularly noticeable immediately after a digital examination It seemed to me that when the gland enlarged it encroached on the anal canal and made it slightly patulous

Through mechanical action an enlarged prostate may cause swelling of the hemorrhoidal veins These varicosities in themselves have a tendency to cause constipation by obstructing the free passage of feces

Where there is stricture of the urethra, severe urethritis, phimosis, cystitis, vesical calculus, or prostatitis, the straining necessary to perform the act of micturition may bring on hemorrhoids, or even prolapse of the rectum The latter occurs most often in young children

In pruritus ani it is often such a difficult problem to find the cause that every possible diagnostic means should be employed to discover the etiologic factor That itching may come reflexly from a lesion in the genito-urinary tract is generally overlooked Yet pruritus ani may be closely associated with urethral pruritus, and be due to the very same causes as the latter Urethral stricture, polypi in the urethra, inflammation of the urethra, especially of the deep urethra or its adnexa, phimosis, stone in the bladder, gonorrhea in women, and enlargement of the prostate gland, are some of the more common reflex causes of anal itching On the other hand, I have seen a very severe scrotal and perineal pruritus caused by lesions entirely within the anal canal

A number of cases have come under my observation in which, as a result of too frequent or too energetic massage of the prostate, an anal fissure, ulceration of the rectal mucosa, or a proctitis has resulted Prolonged irrigation with hot water in the treatment of inflammatory conditions of the prostate and seminal vesicles were also causes at times of quite a severe proctitis

One case of colitis and proctitis was seen which I am certain was due to the prolonged ingestion of mercury given in treatment of syphilis

These cases were referred on account of anorectal symptoms such as pain on defecation, a feeling of uneasiness or fulness in the rectum, or rectal tenesmus Occasionally instead of a fissure, which one would expect to find from the history and symptomatology, a chancre of the anus, or chancroids, have been discovered

Consequent on secondary inoculation from a vaginal discharge, burning and pain in the anorectal region, with difficulty in defecation, may be symptomatic of a gonorrheal proctitis in women All the cases of gonorrhea of the rectum in the male which I have seen were generally of the primary type, due to pederastic practices

From acute and chronic posterior urethritis, prostatitis, and vesiculitis, burning or shooting pains may be referred to the rectum and anus Sometimes there may be only a vague sensation of fulness which comes on even though the rectum is entirely empty of feces

Neuralgia and bearing down pains in the rectum may be the most prominent symptoms caused by a stricture in the deep urethra These are the cases which, if attention be not paid to the urethra, give the rectal surgeon much trouble in effecting a cure

Stone in the bladder may also be a cause of a variety of rectal symptoms when there is no lesion at all in the anus or rectum

A feeling of considerable uneasiness about the anorectal region, together with pain at time of bowel movement, may be the only symptom caused by a urethral abscess, which, having penetrated behind the triangular ligament, instead of becoming a perineal abscess as is usual, is about to present at the anterior wall of the rectum In such an event, especially when there is a seeming absence of urethral pathology and no urinary symptoms to amount to anything, the diagnosis is often for a time quite a riddle

Neoplastic growths of the bladder, prostate and seminal vesicles may give rise to rectal symptoms such as are common in the early stages of rectal cancer There may be at first no urinary symptoms whatever The trouble is then likely to be mistaken for a rectal cancer until later on when the marked urinary symptoms point to the real cause In cancer of the prostate there is often severe rectal tenesmus

Untreated gummas of the rectum are quite prone to ulcerate and break down From the surface and borders of the resulting ulcers there may spring up an exuberance of granulations which appear like the fungous masses seen in malignant neoplasms For this reason I have always deemed it safest and wisest to have a Wassermann test made in every suspicious growth of the rectum, before arriving at a final diagnosis

A deep-seated abscess of the prostate gland, with an immense brawny infiltration of the glandular and periglandular tissues, may so greatly resemble a malignant growth of the rectum as to be mistaken for the latter Two cases of this kind have come under my observation It may perhaps in passing be of interest to note that in both there was a history of a recent general furunculosis One was seen in consultation recently at the San Francisco Hospital A provisional diagnosis of cancer involving the rectum and prostate had been made, and a proctoscopic examination requested The instrument was passed up above the growth to about the rectosigmoidal junction and then gradually withdrawn As it passed over the swelling the mucosa was noted to be granular and inflamed When the edge of the proctoscope was pressed against this reddened area a little spurt of blood was observed, and when more pressure was made over this point quite a free flow of pus took place, establishing a diagnosis of abscess of the prostate

In consequence of abscess formation from disease of or injury to the genito-urinary tract, a fistulous tract opening into the rectum is very liable to result The possibility of a fistula-in-ano arising from these organs should be borne in mind

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CARCINOMAS OF THE NASOPHARYNX *

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In 1904, Laval[1] was able to collect only twenty-seven instances of primary carcinoma of the nasopharynx Since that time there have appeared under the title of carcinoma of the nasopharynx, or included with reports of other tumors of this region, fairly complete reports of twenty-six additional carcinomas As Kelsey and Brown[2] have remarked, there is unusual difficulty in summarizing the literature of this subject Tumors are not always classified alike by surgeons and pathologists, and carcinoma of this region has at times probably been confounded with sarcoma and endothelioma Many carcinomas reported as having their origin elsewhere may have been primary in the nasopharynx From all available reports, these authors estimate the relative frequency of tumors of the nasopharynx as carcinoma, 30 per cent , sarcoma, 60, and endothelioma, 10 per cent Some are of the opinion that endotheliomas are more frequent[3]

Most carcinomas of the nasopharynx originate in the vault or on the posterior wall, though of the five reported by Citelli,[4] all but one, he states, began on the lateral wall He gives the most accurate and complete histologic descriptions, and states that three of the five carcinomas originated from the covering epithelium of the mucosa (one papillary and two cylindric), the other two from carcinomatous degeneration of the epithelium of the mucous glands It is stated that carcinoma of the nasopharynx may originate, rarely, from the elements which make up the pharynx-hypophysis or from other residual epithelium in the formation of the infundibular stalk, the so-called craniopharyngeal canal No instance is reported

Carcinoma of the nasopharynx is characterized by a rather long latent period, and hence it is difficult to estimate the duration of any particular tumor One patient, aged 40 years, with a carcinoma of the nasopharynx,[5] lived four years and eleven months after the tumor was recognized The malignant tumors of this region give rise to almost identical symptoms, and have a similar course Carcinomas are more prone to ulcerate and lead to epistaxis For a fairly complete discussion of the course, complications and differential diagnosis, one should see the general discussion in the thesis of Laval[1] and the more recent report by Oppikofer[6]

The tumor mass in the later stages, after the ulceration has begun, always appears irregular, fungus-like, gray, multilobulated, covered by a bloody purulent exudate, and may be very hard or soft, depending on the histologic variety Here as elsewhere the younger the individual the more rapidly fatal is the carcinoma as a general rule

Extension may take place in four directions

1 The inferior or pharyngeal route The soft palate is rapidly invaded Difficulty in alimentation is then a chief cause of the cachexia

2 Lateral prolongation This route is not very frequent The tumor may invade the eustachian tube early When this occurs there is sooner or later a middle ear disorder on that side which in several instances has been the initial symptom

3 The anterior or nasal route There is readily growth forward with invasion of the sphenoidal, frontal and ethmoidal sinuses By this route the tumor may involve the brain, penetrating into the anterior cerebral fossae with termination in an enormous intracranial tumor[7] The maxillary sinus and orbit may be invaded In the event of such extensive anterior growth there is intense pain referred to the terminals of the upper divisions of the trigeminal nerve, due to pressure by the tumor on these nerve trunks

4 The posterior or cranial route This is not common The tumor may invade the brain secondarily There is erosion of the bone (Lotzbeck), compression of the brain, extreme persistent headache, ocular disturbances, exophthalmos, stasis in the ophthalmic veins and other symptoms of tumor of the base of the brain

Carcinoma of the nasopharynx very rarely produces visceral metastases There is only one instance recorded The statement then made was that there was a small metastatic growth in one kidney and nowhere else At the two postmortem examinations, reports of which follow, no tumors were found anywhere in the viscera, and all organs were carefully examined both grossly and histologically As a rule carcinomas of the nasopharynx give earlier adenopathy than other tumors of this region, and several patients consulted the physician on account of the enlarged cervical lymph glands In other patients glandular enlargements did not appear, though this is rare Molinie[8] wishes to impress that the cervical adenopathy is a fairly con-

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* From the Pathological Laboratory of Rush Medical College

[1] Laval, Frederic Des tumeurs malignes du naso pharynx (étude clinique) Toulouse, 1904 Des tumeurs malignes du naso pharynx Arch internat. de Laryng , 1905 Two of these tumors referred to by Laval Observationes VII and XIX, are not certainly carcinomas because of lack of proper histologic and postmortem evidence Some of the early tumors tabulated by this author were not definitely either carcinoma or sarcoma but were merely malignant tumors and may have been primary elsewhere, as Observatio III of Verneuil and Flour in which the tumor may have been primary in the thyroid gland For further details see the thesis of Laval.

[2] Kelsey A L and Brown J M Malignant Tumors of the Nasopharynx Ann Otol Rhinol and Laryngol., 1913 xxii 1147

[3] Trotter, W Brit Med Jour 1911 ii 1057

[4] Citelli Ten Cases of Primary Tumor of the Nasopharynx Ztschr f Laryngol., 1911, vi 331

[5] Brown E J Epithelioma of the Nasopharynx Laryngoscope 1898 v 219

[6] Oppikofer E Ueber die primare maligne Geschwulste des Nasen rachenraumes Arch f Laryngol u Rhinol , 1913 The list of the references cited at the end of this report is very extensive and concerns all of the tumors of the nasopharynx

[7] See the descriptions of the tumors reported by H Schmidt and Lotzbeck in the treatise by Martin Mulfarth Ueber maligne Geschwulste des Nasenrachenraumes, Aus der Chirurgie Klinik zum Bomm, January 1893

[8]. Molinie Cancer du Naso pharynx Larynx Marseilles and Paris 1913 vi, 75 The tumor reported by Molinie, though probably a carcinoma is not included with the twenty six instances collected since the Laval summary because of insufficient histologic proof

stant early sign of malignant tumor of the nasopharynx, and urges a very careful examination of the nose, pharynx and nasopharynx whenever a cause for cervical adenopathy is not found elsewhere Carcinoma of the nasopharynx is particularly characterized by infiltration, disintegration and early destruction of the neighboring tissues

About 60 per cent of the carcinomas of the nasopharynx occur in individuals between 40 and 60 years old The average of those collected since the report of Laval is 40 years, and these are nearly equally divided as to sex The youngest patients were a girl,[8] aged 13 years, a boy,[9] aged 16 years, and a girl,[10] aged 17 years Included in the summary of Chevalier Jackson[11] there is one reported by Jackson in a woman, aged 23, and another in a boy[12] aged 14 years There are several between 20 and 30 years old

Judging from the number of these tumors which have been reported, it would seem to be a very rare disease Moritz Schmidt, in over 30,000 patients with disease of the nose and throat, found none of carcinoma of the nasopharynx Many others, who have had a very wide experience, have not recognized this tumor in any of their patients It seems significant, however, that nearly half of the carcinomas, reports of which have been collected since the summary of Laval, have been diagnosed by two men, Compaired and Oppikofer, who like others had difficulty in recognizing the disease at first It seems reasonable to think that perhaps these tumors are not so uncommon after all, and that if they were more often suspected they might be more frequently detected Most of these tumors have naturally been reported by rhinologists rather than by general surgeons The symptoms are based on respiratory disturbances, auditory disturbances and glandular enlargement Many of the glandular enlargements encountered were at first considered as due to tuberculosis, and only subsequently developments cleared the diagnosis In both of the reports which follow, the first diagnosis was tuberculous cervical lymphadenitis In some instances the diagnosis was syphilitic lymphadenitis, due to an extragenital chancre in one, in others as a part of a general lymphadenopathy of syphilis Antisyphilitic treatment was employed for nearly a year in one instance before the mistake was discovered In 1908 there appeared a report of what G Parlevecchio[13] designated "a case of aleukaemic lymphadeni of endotheliomatous nature" This was most certainly an example of carcinoma of the nasopharynx There was no postmortem examination The rhinologists have mistaken the disease for simple fibromas, hypertrophy of Luschka's tonsil, especially where there was infiltration and enlargement of the faucial tonsils, and deviations and hypertrophies of the inferior turbinated body In most of these mistakes the fault was due to the failure to examine the patient properly, using palpation and posterior rhinoscopy

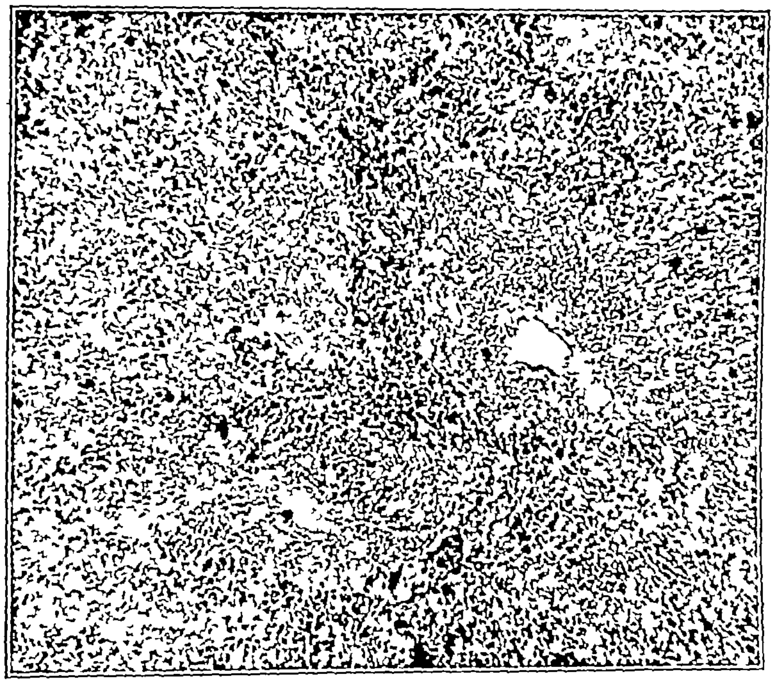

Fig 1—Photomicrograph (X 80) of a section from the vault of the nasopharynx (Case 1), illustrating the general arrangement of the rapidly growing carcinomatous cells, in many places closely set with a tendency to form ductlike structures with open spaces for their lumina

By most authors it is conceded that radical surgical treatment is never indicated, but rather are repeated palliative procedures advised No certain cure is recorded

The following clinical histories and brief descriptions of the changes found on postmortem examinations have to do with carcinomas of the nasopharynx in two young patients

CASE 1—*History*—H M G, a physician and intern in the Cook County Hospital, aged 26, entered the Presbyterian Hospital of Chicago, March 17, 1909, with the following history About fifteen months before he had noted that the cervical lymph glands were enlarged Those first enlarged were at the angle of the jaw These were always the largest, but the patient thought that they had decreased somewhat in size during the past six months

The glands located lower down had gradually become palpable, particularly on the left side, where one was very prominent The glands were never tender, and were always freely movable. The general health had been fairly good The patient stated that he had had a subnormal temperature (from 97.2 to 97 8 F) for about a year

The past history otherwise was negative except for a severe attack of furunculosis over the back of the neck about four months before At that time many glands which before were not palpable became enlarged, and many persisted The immediate relatives were living and well, and there was no history of tuberculosis in the family

On examination, the tonsils and thyroid gland were not enlarged There was no exophthalmos The glands along each sternocleidomastoid muscle were enlarged, but not adherent to the skin or to surrounding structures, and were not fluctuant The glands were superficial and pea to hazelnut in size, those on the left the larger The physical examination was otherwise practically negative The leukocyte count of the blood was 8,250 per cubic millimeter, and the hemoglobin was 90 per cent March 22, a differential blood count was made, which revealed small mononuclears, 33 per cent, large mononuclears, 11 per cent, polymorphonuclear neutrophils, 49 per cent, and eosinophils, 7 per cent A diagnosis of cervical lymphadenitis and periadenitis was made

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[9] Baldwin, Kate Malignant Growths of the Nasopharynx, Jour Ophth and Oto Laryngol, 1908, ii, 12

[10] Guthrie, Thomas Carcinoma of the Nasopharynx in a Girl, Aged 17 Years, Jour Laryngol, 1911, xxvi, 449

[11] Jackson, Chevalier Primary Carcinoma of the Nasopharynx, a Table of Cases, The Journal A M A, Aug 10, 1901, p 371 It is to be noted in reviewing the table of Laval that a number of the patients in whom these tumors occurred are not identical with those found in the table of Jackson

[12] Elder, J M Report of a Case of Nasopharyngeal Carcinoma, Montreal Med Jour, 1900, p 900

[13] Parlevecchio, G Ein Fall aleukämischer Lymphadenie von endotheliomatöser Natur, Arch f klin Chir, 1908, lxviii, 46

March 18, Dr Dean Lewis operated, removing the superficial chain of lymph glands on the left side and a few deep glands in the mastoid region and along the jugular vein

The pathologic report made at that time was hyperplastic tuberculosis (?)," though no giant cells were found

The patient was discharged March 23, and returned again, Nov 17, 1909 Operation was performed again, on both sides this time Considerable periadenitis and scar tissue were found Enlarged glands were enucleated from both sides, and part of the left sternocleidomastoid muscle was cut away

A diagnosis of endothelioma of the cervical lymph glands was made from the histologic sections At this time considerable bacteriologic work was done by Dr E C Rosenow with material taken from the enlarged glands, with negative results

The patient returned to the hospital from June 8 to June 12 1910, to have some of the axillary glands removed, intending to have autogenous vaccines made The blood examination at this time showed that there were 12,400 leukocytes per cubic millimeter, and 4,112,000 erythrocytes, with hemoglobin 70 per cent (Dare) At the time of the writing of this history the clinical diagnosis recorded was "epithelioma of the glands of the neck '

Necropsy Report —The patient died at his home, Aug 19, 1910 and a postmortem examination was made about two hours after death by Dr E R LeCount The following description of the tumor and its extension was made

'At the summit of a swelling opposite the angle of the left lower jaw there is a small surgical dressing covering a sinus surrounded by an elevated mass of yellow tissue almost spherical and from 3 to 3 5 cm in diameter The elevation is 1 cm This growth is at the upper end of a scar which extends along the sternomastoid muscle a distance of 7 cm The left eye is edematous and the left pupil is larger than the right

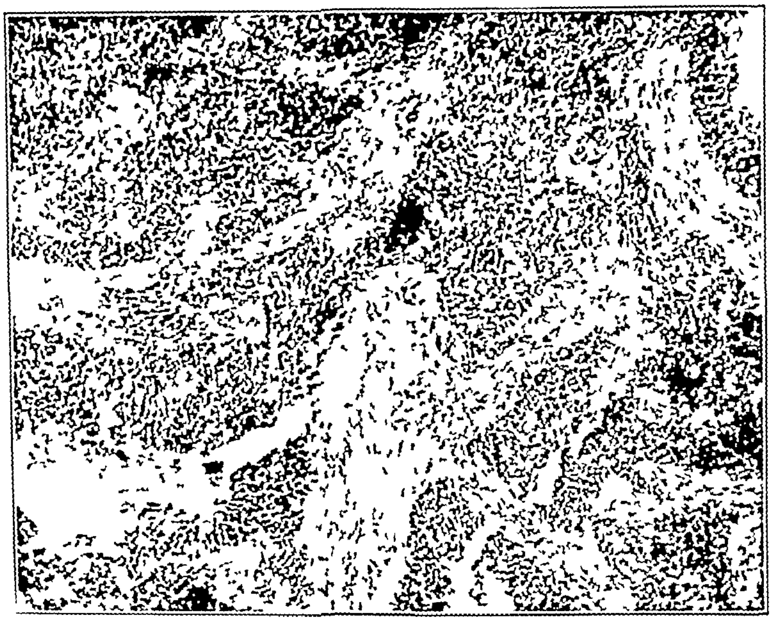


Fig 2—Photomicrograph (× 80) of a section from the posterior wall of the nasopharynx (Case 2) The arrangement of the cells forming open spaces surrounded by closely placed epithelial cells acinar and tubular structures is better illustrated than in Figure 1 There is relatively much more of the tumor tissue

On dissecting the skin and muscles laterally from in front of the left clavicle, a lymph gland-like mass is found in front of the left clavicle, 2 cm. long and yellowish firm and with a structure similar to that of other glands or tumor masses described in the following A milky fluid escapes from the growth on the left side of the neck in dissecting the skin away from it

As the skull is opened, large amounts of clear colorless cerebrospinal fluid escape After the brain is removed there is noticeable a swollen hypophysis cerebri, and a widening of the sella turcica Also it is evident that the apices of the orbital cavities are filled not only with the vessels and nerves which normally pass through this region, but also by tumor tissue similar to that encountered in the neck. From either side of the sella turcica soft tissue projects so that from margin to margin transversely measured the distance is 3 cm In the roof of the pharynx is a mass of soft tissue the color of yellow wax and quite uniform in appearance The tissue is continuous with the mass that lies in front of it and the sphenoid bone This tissue has apparently filled up the foramina at the apices of the orbital cavities, as stated.

"The epiglottis is edematous and thick The left side of the glottis in the aryteno-epiglottidean fold is 1 cm thick and soft and jellylike Edema is less marked on the right side On the left side the posterior and lateral wall behind the tonsil is also thickened and jellylike There is no erosion of the mucosa in this region The tonsil on the left side is enlarged and rounded, and projects a centimeter It is 2 5 cm long This also has no erosion of the mucosa The opposite tonsil is somewhat enlarged There is an edema of the right side of the pharynx behind the tonsil, but less than on the left side The tongue and submaxillary glands on both sides are unchanged

'The glands in the left axilla form a mass approximately as large as a hen s egg Some are adherent The largest mass of them is 5 cm long On section the tissue is yellowish-gray and mottled with yellowish minute regions 3 to 5 mm in diameter Most of the glands are 2 to 3 cm in their longest diameters

"In the site of the operation there is a hard thick mass just to the left of the thyroid gland, which also is the size of a hen's egg and very firm On the right side along the carotid artery there are a few enlarged lymph glands, none of them over 2 cm long On section one of these is considerably softened There is no change in the larynx or upper portion of the trachea except for edema The left vocal cord is twice as large as the right

In pieces removed from the very roof of the pharynx, the mucosa is swollen edematous and the seat of an ulcer twice the size of the thumb nail and the margins of the ulcer are markedly elevated"

Anatomic Diagnosis —The other changes are indicated in the anatomic diagnosis which follows

'Primary ulcerating carcinoma of the roof of the nasopharynx, metastatic growths in the lymph glands and tissues on the left side of the neck lymph glands in front of the left clavicle axillary and right carotid lymph glands, extension of the nasopharyngeal tumor into the sella turcica, about the hypophysis cerebri and into the orbits, marked edema of the brain and leptomeninges, left side of the face and neck, left eyelids epiglottis, tonsils, pharynx, larynx upper portion of the trachea, nasopharynx and mediastinal tissues, dilated left pupil, scar from a surgeon's incision on the left side of the neck with a sinus at its upper end, moderate emaciation, slight hypostatic bronchopneumonia, hypostatic hyperemia and edema of the lungs, slight hyperplasia of the tracheobronchial lymph glands, small tuberculous ulcer of the ileum, moderate hyperplasia of the mesenteric lymph glands, slight of those about the pancreas, hyperplasia of the spleen with passive hyperemia and hypostasis, passive hyperemia of the liver and kidneys, retention cyst of the left kidney, slight fatty changes in the lining of the aorta, moderate coal-dust pigmentation of the tracheobronchial lymph glands, flat chest

"The histologic examination of tissues taken from all of the viscera and various parts of the tumor confirmed the gross diagnoses In sections from various portions of the roof of the pharynx, the larger part of the sections consists of white instance, only slight compression can be made and the bite held firmly, or, if this does not suffice to control the bleeding, the forceps can be closed more tightly The goose-neck shank is so constructed as to keep the handles outside of the cheek while the forceps are in place The compression is made by two corrugated tips, flanging slightly at the end, thus better regulating the degree of pressure exerted over the pillars *The area covered by the compression is one-eighth by three-eighths inch*

After removal of the tonsil, the curved compression forceps are applied high up, so as to compress the vessels in that area of the tonsillar fossa, the posterior blade being against the posterior surface of the posterior pillar, while the anterior blade fits against the anterior surface of the anterior pillar The point of most importance is to pass the compression tips to a sufficient distance toward the lateral wall of the throat, so as to include in the bite (*a*) that portion of the posterior pillar next to the constrictor of the pharynx, (*b*) the floor of the tonsillar fossa and (*c*) that portion of the anterior pillar next to the mucosa of the cheek While not absolutely necessary, the application can be facilitated by pulling forward the soft palate by means of the soft catheter previously passed through the nostrils and out of the mouth (Fig 3)

Unless care is exercised in adhering to the foregoing technic, there will be included in the bite only the internal borders of the pillars without any of the floor of the tonsillar fossa (Fig 3) Of course the superficial bite will not stop bleeding from the depth, as there will be no pressure exerted on the vessels in the fossa As a result there will be a ballooning out of the pillars under which oozing will continue If bleeding occurs from the bottom of the fossa, the straight forceps (Fig 4, made on the same principle except that the shank is straight), are thus applied over the lower portion of the fossa After a few moments the forceps can be removed or left on until the opposite tonsil or adenoid tissue is removed If the bleeding recurs, it is a very easy matter to readjust the forceps and leave them in place a few moments longer

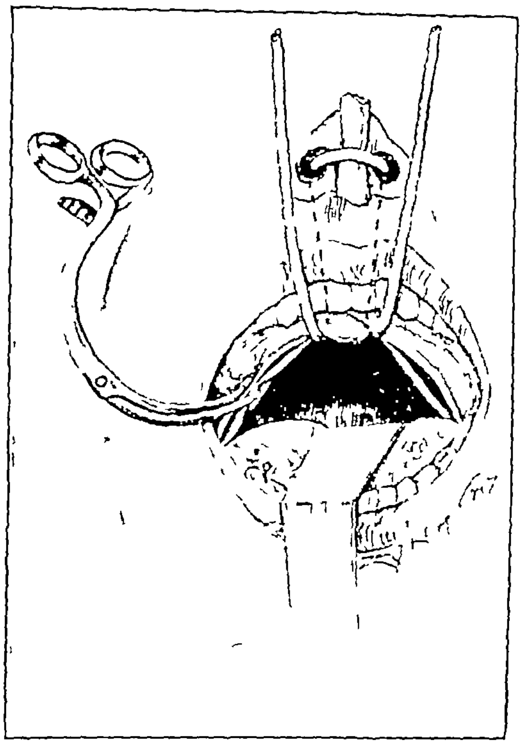


Fig 3 —Pillar compression forceps applied to right side, no hindrance to removal of adenoids

The same results can be obtained in controlling a secondary hemorrhage, and a factor of great importance is that *the pillars are in no way injured* by the force of the compression, so that should it be necessary to introduce a suture or two for the purpose of obtaining a more prolonged compression of the fossa, this can be done without the fear of their tearing out because of previous interference with the vitality of the tissue

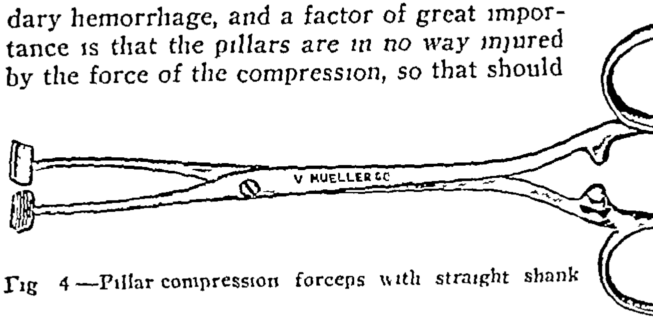


Fig 4 —Pillar compression forceps with straight shank

104 South Michigan Avenue

Selection Necessary for Race Betterment.—Abundant well balanced nourishment and thorough culture of plants or animals will always produce good results in holding any species or variety up to its best hereditary possibilities, beyond which it *cannot carry them,* and lacking which, maximum development can never be realized

APPARATUS FOR USE IN BLOOD TRANSFUSIONS, SALVARSAN ADMINISTRATION, ASPIRATION, ETC

William Lintz, M D, Brooklyn
Professor of Bacteriology, Long Island College Hospital, Associate Visiting Physician, Brooklyn Jewish Hospital

There are numerous apparatus devised for blood transfusion, aspiration of fluids, salvarsan administration, etc A single apparatus, however, which may be used for all these purposes with a marked degree of efficiency is certainly very desirable I feel, therefore, that no excuse is necessary for bringing forward this new apparatus

DESCRIPTION OF APPARATUS

It is composed of a large record syringe, from 30 to 50 c c in capacity, capable of producing a vacuum in both chambers (1) and (2), depending on whether the plunger (3) is respectively pulled or pushed This is made possible by the metallic cap (24) fitting air-tight around the piston of the plunger at 11 and containing the additional nozzle (13) The syringe, therefore, has two nozzles, one at each extremity, nozzle 12 communicating with chamber 1 and nozzle 13 with chamber 2 The four flow stopcock (8) having four openings (16, 17, 18 and 19) allows the two-way flow to go on at the same time A piece of rubber tubing (14) connects opening 16 with nozzle 12, tubing 15 connects opening 19 to nozzle 13, tubing 20 connects opening 18 to the vein of the recipient by means of a cannula, and tubing 21 connects opening 17 with the vein of the donor by means of a cannula By means of elevation 6 in the rod (5) which is attached to the handle of the plunger (7), the four flow stopcock is made to rotate automatically so that fluid entering the opening (17) will leave through opening 16 into tubing 14, and fill chamber 1 of the barrel through nozzle 12 At the same time fluid in chamber 2 will be pushed out through nozzle 13 and enter opening 18 into the recipient, provided the plunger (3) is pulled and a vacuum is created in chamber 1 If the plunger is pushed and a vacuum is created in chamber 2, fluid will enter opening 17, and the four flow stopcock working automatically by means of an elevation at the distal end of the rod (5) will turn the four flow stopcock so that fluids will enter opening 17 and leave by means of opening 19 through tube 15 into nozzle 13 and fill up chamber 2 At the same time fluid in chamber 1 will be expressed through nozzle 12, through tube 14, enter opening 16 of stopcock, and leave through opening 18, into tube 20, into the vein of the recipient, 22 acts merely as a guide for rod 5

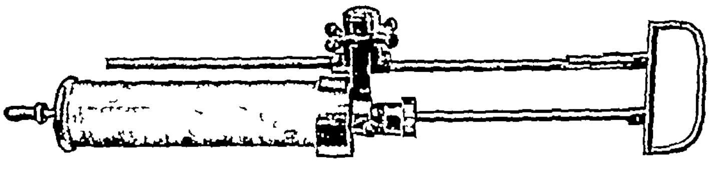


Fig 1 —Side view of apparatus, unconnected by rubber tubing, it can be readily taken apart for cleaning purposes

HOW TO WORK APPARATUS

For Blood Transfusion—Indirect Method—Remove all air from apparatus and fill it with normal saline This can be readily accomplished by allowing saline to enter through tubing 21 and aspirating the saline into chamber 1 by pulling on handle 7 This will bring plunger 3 in opposition to the cap (24) Pushing on handle 7 will now turn the stopcock, and saline will fill up chamber 2, and at the same time will expel the saline from chamber 1, emptying through tube 20 When chamber 2 and all the tubings and openings are filled with saline, the cannulas are placed into the veins of the recipient and the donor in the usual manner The apparatus is now operated as an ordinary syringe, pulled and pushed respectively by handle 7 The blood will flow into chamber 1, at the same time expelling the saline in chamber 2 into the vein of the recipient, when the handle (7) is pulled and a vacuum is created in chamber 1 When the handle (7) is pushed and a vacuum created in chamber 2, the blood of the donor will flow into chamber 2 at the same time expelling the blood of chamber 1 into the vein of the recipient It will thus be seen that the flow is continuous, entering either chamber 1 or 2 through the donor, and is simultaneously discharged from the opposite chamber into the vein of the recipient

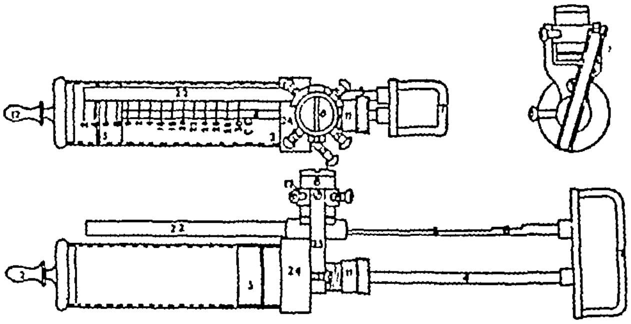


Fig 2—Working drawing of apparatus with plunger in (left upper figure), plunger out (lower figure) plunger in and viewed from handle in front (right upper figure)

Thus there is a continuous flow, uninterrupted from the donor to the recipient, which materially inhibits clotting The barrel of the syringe being graduated, the quantity of blood transfused can at once be estimated Further to inhibit clotting of the blood, it is advisable to subject the entire apparatus to ether spray during the transfusion, as first pointed out by Dr Elsberg of Mount Sinai Hospital The entire apparatus can be readily sterilized by boiling water, steam sterilizer, or autoclaving, and can be very readily taken apart and thoroughly cleaned If the citrated method is used, the receptacle containing the blood becomes the donor Otherwise the method is the same

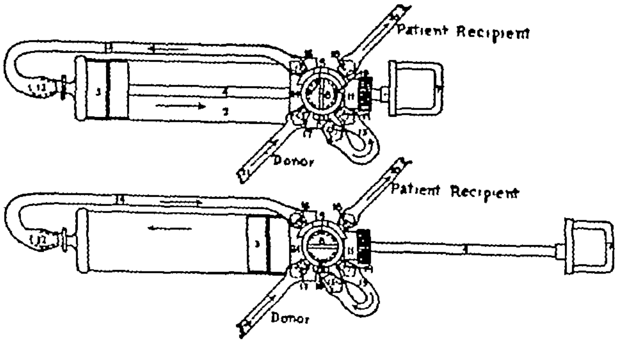


Fig 3—Working drawing of apparatus all connected with rubber tubing with plunger in (upper figure), and the handle (7) pulled on the arrows indicate the flow of the fluid, with plunger out (lower figure), and the handle (7) pushed on, the arrows indicate flow of fluids. The four flow stopcock works automatically

For Aspiration Purposes—Irrespective of the quantity or the location of the fluid, the needle connecting with tubing 21 is plunged into, say, the pleural cavity, which becomes the donor, and the fluid is emptied out into a receptacle, leaving the apparatus through tubing 20 No previous filling of apparatus with saline or emptying of air is of course necessary Since no air can possibly enter the cavity, all chances of infection are avoided

For Salvarsan Administration—The same precaution of filling with saline and emptying of air should be taken as for blood transfusion Tubing 21 is placed into a prepared solution of salvarsan which is emptied into the vein of the recipient, the saline leaving the apparatus through tubing 20

For loading accurately measured amounts of fluids such as antitoxins, vaccines, etc, into containers, this instrument can be used to good advantage The principle is the same for whatever purpose it is applied

Dr William F McKenna has suggested using two syringes, the handles of pistons connected with a walking beam The nozzles of syringes are connected with a four flow stopcock, thus allowing the simultaneous aspirations of blood into one syringe and the expulsion of blood from the other, in other words having two separate barrels of two syringes, instead of the barrel of one syringe for both chambers

1352 Carroll Street

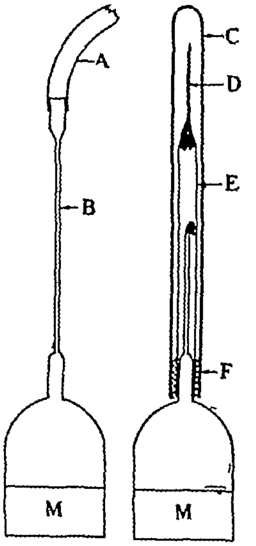
A SIMPLE METHOD FOR BLOOD CULTURES

Paul G Weston, M D, Warren, Pa

The simple device here illustrated has been used by me for some time The tubes are easily prepared, can be shipped through the mails and the medium lasts indefinitely

An ordinary 10 or 25 c c vaccine ampule is half filled with the culture medium—bile, bouillon, etc The neck is then drawn to a capillary tube, and by means of an air pump connected to the water line, a vacuum of 15 or 20 inches is obtained The capillary tube is then sealed in the flame A rubber tube with needle is attached, and this is covered with an outer glass protecting tube as in the Keidel blood collecting tube The whole is then sterilized intermittently or in the autoclave The moisture in the outer, protecting tube rapidly evaporates if the tube is inverted in a rack and placed in the incubator

For use the needle is inserted into a vein and the capillary glass tube is broken After the blood has been collected and the needle removed from the vein, the outer protecting tube is replaced and the tube is ready for shipment No sealing is necessary, as a firm clot plugs the needle I have sent one of these tubes containing normal blood in bouillon to San Francisco and another to Galveston Texas Both were returned to me, and both had remained sterile



By L R Sanborn

Tube for blood cultures *A* connection to air pump *B* capillary tube to be sealed in flame *C* outer protecting tube *D* needle *E* rubber tube, *F* cotton, *M M* medium

THIONIN AS A DIAGNOSTIC STAIN IN PYORRHEA ALVEOLARIS

Martin Dupray, B S, M S, Columbia, Mo

Instructor in Bacteriology and Preventive Medicine University of Missouri, School of Medicine

I have seen no mention in the literature on endamebas in pyorrhea alveolaris of the use of thionin as a diagnostic stain for the endameba In the past fifteen months while doing microscopic work for several dentists in this city, it has been my privilege to examine a large number of slides of alveolar exudate for endamebas and other organisms Most of the preparations were stained before being examined, and the stain used in the majority of cases was thionin The stain was prepared according to the following formula

Thionin	0 5 gm
Distilled water	100.0 c c.
Phenol (carbolic acid) crystals	2 0 gm

This solution must be prepared fresh every three or four months

To prepare the slide, a smear is made of the exudate as with other pus and dried in the air The smear is then fixed in the flame and stained a few seconds while still warm with the thionin solution The stain is washed off with water and the slide dried It may be mounted in balsam with a cover glass, or examined direct in immersion oil as desired The endamebas are stained quite distinctly by this method The cytoplasm is stained a light purplish violet and the nuclei a deeper reddish violet Ingested blood corpuscles and other material undergoing digestion in the body of the organism are stained nearly black The pus cells in the smear are stained a light blue, with their nuclei a deeper blue Bacteria are also well stained, the fusiform bacilli and spirillas being especially plain The endamebas stand out quite distinctly in the smear, and are easily recognized A person accustomed to the use of the microscope can usually see them easily with the low power (two-thirds or 16 mm) objective, using the high power only for verification, hence a considerable area of the smear can be covered in a short time

I have found the stained preparations much more reliable than unstained preparations, and much quicker, on account of the time consumed in examining an unstained slide Thionin has also given more uniform results than the double staining method with fuchsin and methylene blue, and the stain is made more quickly and easily

This stain does not give good histologic pictures of the endamebas, and is recommended only as a diagnostic stain, for which purpose it gives very plain pictures of both the endamebas and the bacteria

Special Article

WHAT THE CIVILIAN DOCTOR CALLED TO ACTIVE SERVICE WITH THE ARMY SHOULD KNOW

(Continued from p 426)

II DUTIES ON THE LINE OF COMMUNICATIONS, SANITARY MEASURES IN CAMPS

In comparatively recent times, as the result of progress in medicine itself, the scope of the duties of an army surgeon have been greatly extended These are in the direction principally of sanitation and administrative lines Both in mobilization camps and in the camps made by an army in the field, the same general principles relative to sanitation prevail There is, nevertheless, considerable difference between stationary and permanent camps, such as the place where recruits are mobilized, and the camps that troops moving in the field make themselves In the mobilization camp, if permanent in character, we may have, for instance, large storehouses or depots where supplies of food and clothing and fuel are readily obtained for issue, we may have a water supply distributed by a system of pipes throughout the camp, carrying water of known potability, we may even have a water-carriage sewage system, and certainly the surroundings of such a camp should give rise to no disease borne either by impure water or milk, or conveyed by insects such as mosquitoes and flies In short, the only marked difference from a well conducted civilian community would be that the inhabitants of such a camp are living under canvas rather than in well constructed houses On the other hand, during the Spanish war, permanent camps, such as have been described above, were far from being such healthy places Mobilization camps may be unprovided with satisfactory water supply or systems of conservancy, and it then becomes the duties of the medical officers to recommend suitable systems and to inspect the working of them in order that the health of the troops may be maintained What applies to a mobilization camp under such circumstances applies equally to a camp of troops living in the field whether in their own or the enemy's country

Of great importance is the selection of a proper site for a camp There are a number of factors instrumental in affecting the salubrity of a camp site In the field this matter is determined by military exigencies In mobilization and concentration camps the matter is within control of the authorities, and properly informed persons should be the ones entrusted with the selection of such sites As these matters are determined by others than the newly commissioned officers, they will not be taken up here, important as they are

All information must be gathered about the water which is to be used for drinking purposes Indeed, when practicable, this information should be obtained prior to the time that troops will require to use a certain supply of water If the water is potable, the source of the supply must be protected from pollution, if it is questionable in quality, proper measures must early be taken to render it safe for drinking purposes Briefly, these are the guarding of the source from further pollution treating of the water by boiling, filtering, or sterilizing with special field appliances, as conditions indicate

The next important measure is the prompt installation of a method of disposal of camp wastes Wastes from the kitchens may either be burned or removed Most important and most difficult is the method of disposing of human excreta Measures to accomplish this have been very thoroughly and satisfactorily worked out since the Spanish war Where there is no danger to water supplies, and the probable life of the camp is limited to a year or less, a trench system can be used which supplies a pit for each company or organization with a fly-tight box cover The pit is burned out each day with crude petroleum and straw or some inflammable material One should not labor under the false impression that the contents of such a pit are sterilized Incineration of the sides of the pit and the bare surface of the contents lying on the bottom are the only effects this produces The only results are the destruction of fly larvae and the deodorization to a certain extent of the pit and its contents Furthermore, it darkens the surfaces with soot and thus makes it less likely to attract flies The latrines of a modern camp, when exigencies of war permit it, are kept most scrupulously clean in order to prevent the spread through contact of typhoid and dysentery, and to give the fly no opportunity to carry the organisms of these diseases to the food In permanent camps, incinerators have been used with complete satisfaction, though at some considerable cost for fuel in the disposing of human excreta There are several types of these, and one of them is capable of destroying at the same time the garbage from the company kitchen The details of the management of these appliances, as well as of the trench system of latrines, should be studied Information on these subjects will be found in the military hygienes which are authorized for issue to medical officers of the National Guard, and in papers written by sanitary inspectors of the large camps that the army has had in Texas for the past few years[1]

Proper arrangements must be effected for maintaining the personal cleanliness of the men, in the field, time and occasion are mode for this purpose though even in the presence of the enemy In France the troops are relieved at given periods in the trenches for the purpose of enabling them to bathe and change their clothing, as well as to obtain rest These measures are especially important among recruits, and every mobilization camp should have a system of shower baths and a place where the men can wash their clothes themselves, even though some facilities for having them laundered may exist Given a reasonably salubrious camp site, potable water, sufficient tents or other form of shelter, a system of conservancy by which the camp is kept unpolluted, effective measures for disposing of the manure from animals in and around the camp and thus preventing the development of flies, and opportunity for the men to bathe and wash their clothes, the health of a command should be maintained under these conditions almost indefinitely The prevention of fly breeding in the collections of manure in every camp is a matter of great concern, and a satisfactory solution is described by some of the authors mentioned

The foregoing measures in connection with the vaccination against typhoid fever and smallpox will confine the disabilities in a camp of mobilization largely to the injuries following accidents, venereal diseases, and to the inevitable measles and mumps Diphtheria, tonsillitis and cerebrospinal meningitis may make their appearance, but in the absence of overcrowding are not a cause of serious concern

So far we have dealt almost entirely with the duties of the recruiting officer and the sanitarian We must consider briefly other duties of the medical officer in this zone or service of the rear These are duties not with the soldier who is waiting to proceed to the front, but with the soldier who, having been at the front, has now returned, completing the circle, as it were While in the home territory we have the camps of mobilization and concentration, recruiting, training and equipping new men who are to go to the front, we have in the same territory hospitals and convalescent camps occupied by men who have been at the front and who have been disabled by either wounds or disease With them the duties of the medical officer are almost entirely of a professional character, and those who may have read that most interesting address of the late Dr S Weir Mitchell[2] have already grasped the character of the service Briefly, we are dealing with two classes of soldiers The first, and most important, are those men temporarily disabled who may through intelligent treatment be restored to health and returned to the colors for further service It is *in this field* that, as far as we know to date, most marked advances have been made by the medical profession of the armies in conflict in Europe today, but to these hospitals in the rear come only the second class, the soldiers who have either been seriously incapacitated or whose disabilities are of such a nature that considerable time is required for them to be restored to health, and those who will probably remain permanent cripples From the convalescent camps we expect practically all of the men to be able to return to the colors, because only patients who give such promise are usually sent to these camps Besides the large general hospitals, there will be more numerous base hospitals accommodating about 500 patients each, and here are weeded out patients described above who are forwarded on to general hospitals, and those patients who give promise of early restoration to health, and in consequence of which will be promptly sent back to their regiments These hospitals have a staff of about twenty medical officers Besides being able to give skilful professional care, they must also have the experience to weed out the hypochondriacs and malingerers, who always appear in the wake of a large army These hospitals are usually in buildings, public or private, suitable for the purpose, and in every way resemble civilian general hospitals of similar size The organization of a suitable administrative force for such hospitals is no easy task, and cannot be improvised over night

As the general sanitary measures necessary for the maintenance of the health of troops are much the same, whether in the zone of the interior or in the line of communications, or even in the zone of the advance, they have been dealt with as if the camps and hospitals mentioned above were all in the same zone Let it be clearly understood that the medical officers of the concentration camps are almost invariably in the zone of the interior In this zone are also found the general hospitals and some of the convalescent camps In the territory covered by the line of communications are found the base hospitals at the base of this line, and the evacuation hospitals along the line and at its head, also rest stations and the camps of troops guarding the line and engaged in forwarding supplies and reserves

Besides the sanitary duties which the medical officer must exercise in these camps will be the care of the sick and wounded passing along this line to the rear, or the zone of the interior He will also be charged with the transportation of the wounded Therefore, officers of administration capacity and experience in such work must be chosen to superintend the movement of the sick and wounded along this line It will be readily appreciated that unless they are kept moving toward the rear, the hospital accommodations at the front and in the zone of advance will rapidly become clogged, resulting in a partial immobility of the field hospitals, and to a greater or lesser extent of the mobile army itself It is along this line that much suffering and waste of life can be prevented by experienced and trained men It is here, as well as in the zone of advance, that men trained in the administration of ambulance companies, hospital trains and rest stations will be indispensable Assisting them must be many medical officers whose principal duties will be the care of the sick and wounded In fact, where the evacuation of the wounded is ably managed, it has been found, in many instances in the present European war, that the first treatment, other than the emergency or first-aid, is given by the medical unit on this line, so rapidly are the wounded brought back when circumstances permit

(*To be continued*)

Hygiene of Life—To teach the people how to live is a problem of increasing importance to those who are working for the public health—E L Fisk, *Am Jour Pub Health*

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[1] Havard Military Hygiene. Keefer Military Hygiene. Mason Handbook *for the Hospital Corps* Ashburn Elements of Military Hygiene Woodhull Military Hygiene for Officers of the Line. Straub Sanitation of the Maneuver Camp at San Antonio Texas 1911 Miller Sanitation of the Second Division U S Army at Texas City and Galveston 1913

[2] Mitchell S Weir The Medical Department in the Civil War THE JOURNAL A M A May 9, 1914, p 1445

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SATURDAY, FEBRUARY 12, 1916

THE EFFECTS OF RADIUM RAYS ON PROTOPLASM

All of the claims which have been made with respect to the physiologic or pathologic effects of radioactive substances must ultimately be carried back to the effects of their radiations on protoplasm. Whether it be the growth of plants in the soil or the destruction of a neoplasm in the body that is involved, the primary reactive substance and responsive mechanism must be associated with living cells. It is reasonable, therefore, to turn to the unit of structure, the cell, in any fundamental inquiry as to the effects of a potent agency on the plant or animal body.

Of course, the other factor, the radiation itself, also deserves consideration. Of the three types of radiations given off by radium, the alpha rays, which are chemically the most active, are of secondary interest here because, owing to their slight power of penetration, they are absorbed by the containers in which the radium salts are ordinarily held, and accordingly do not reach the external object. The beta rays are not so readily absorbed, and are chemically much less active. The gamma rays are similar to the hard Roentgen rays in many respects. Rutherford, in fact, states that they are the more penetrating Roentgen rays. Since they are not absorbed to any extent, their effects may be of a different order from those of the beta rays. Richards,[1] however, believes that they differ in degree rather than in the kind of their action. The beta rays can be separated from the gamma rays in a magnetic field, inasmuch as the beta rays alone are deflected thereby.

Broadly speaking, slight exposure to radium in most cases accelerates the vital processes, while a more intense treatment retards or inhibits them. Also the effect of the retardation may be cumulative and persistent through many cell generations. Gager[2] believed that radium rays stimulate metabolism. "If this stimulus ranges between minimum and optimum points, all metabolic activities, whether constructive or destructive, are accelerated, but if the stimulus increases from the optimum toward the maximum point, it becomes an overstimulus, and all metabolic activities are depressed and finally completely inhibited."

While in this country the medical side of the problem has attracted more investigators than the biologic side, much work has been done abroad to establish the mechanism by which radium rays affect living matter. The hypothesis of Schwarz was that radium decomposes the lecithin in the cell. Oskar Hertwig, his son, his daughter and his pupils have performed many extensive series of experiments over a wide range of forms, the most significant conclusion which they draw being that radium affects, directly and chiefly, the chromatin of the radiated cells. Packard, basing his theory on the observation of numerous investigators that radium rays affect enzymes, suggests that "the lytic enzymes in the cell are more stimulated than those which play a synthesizing rôle." By activating autolytic enzymes which bring about a degeneration of the complex proteins, he believes, the radium radiations act indirectly on the chromatin and protoplasm. Richardson regards the lecithin hypothesis of Schwarz as "completely overthrown" by a number of arguments which were unknown at the time it was propounded. He also finds the chromatin theory of Hertwig unsatisfactory in that it fails to account for the fact that substances and structures other than nuclear are affected by Roentgen rays and radium. Against Packard's enzyme theory Richardson sees little objection to be urged except that it rests on insecure evidence, few actual observations or experiments having contributed to it.

In a recent paper, Packard[3] describes the results of study of the effects of beta and gamma rays on protozoa and on the egg cells of sea urchins and other low forms of life. He finds that cells differ from each other in susceptibility, apart from the fact that each cell seems to vary in susceptibility during different phases of its own activity. Some protozoa, like some bacteria, are entirely unaffected by long exposure to vigorous radiation, while others are killed by shorter exposure. In some the chromatin, in others the protoplasm, is chiefly affected. It is known that inorganic substances undergo ionization from radiation, but whether or not the cell changes are due to ionization of the constituents of the protoplasm remains to be decided. Packard believes that those cells which are injured contain substances which absorb the rays, while those which are unharmed allow the rays to pass through unchanged. The unknown factor is the material which determines the power of absorption. From a medical point of view the deduction is important that, until more is known about what causes the absorption as well as the penetration of the various radiations, it will be impossible to predict precisely what effect a given exposure to any type of radiation will produce

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[1] Richards, A. Recent Studies on the Biological Effects of Radioactivity, Science, 1915, xlii, 287.

[2] Gager, C. S. Effects of the Rays of Radium on Plants, Mem. New York Bot. Garden, 1908, iv.

[3] Packard, C. The Effects of the Beta and Gamma Rays of Radium on Protoplasm, Jour. Exper. Zool., 1915, xix, 323.

It is to be hoped that before long the effects of radium from the biologic point of view may be better understood This will pave the way for a more rational application of radium in therapeutics

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SPRUE

Sprue is a tropical disease of growing importance to American physicians It has already been reported in our Southern states,[1] and imported cases seem to be becoming more frequent Sprue in its clinical manifestations is similar to pellagra, some authors have even asserted that the two diseases are identical [2] The cardinal symptoms of "typical" or "complete" sprue are usually given as stomatitis, a peculiar diarrhea, diminution in the size of the liver and secondary anemia with wasting There are neither skin nor nervous manifestations In pellagra, however, skin symptoms are often in abeyance, and nervous symptoms may be so slight as to be negligible Reduction in the size of the liver, anemia and wasting are common to the two affections Both diseases have been denied classification as morbid entities, being regarded rather as syndromes which may appear secondarily in many wasting affections

One important difference between them is to be found in the character of the diarrhea, and more especially in the stool itself In sprue the diarrhea occurs usually in the early hours of the day, the stool is voluminous, light in color, acid in reaction and of a foamy, gaseous character In pellagra these characteristics are not observed The chemical study of the stool, in the light of later studies, seems to be highly important in differentiation between the two diseases The large size of the sprue stool is due to the lack of digestion and absorption of certain bodies, notably the fats Wood[1] thinks that the only certain means of differentiating sprue from pellagra is the chemical study of the feces Fatty stools with great fat and nitrogen loss, in his opinion, are characteristic of sprue, while in pellagra the fat and nitrogen absorption are about normal This character of stool, it is to be noted, is also characteristic of pancreatic disease, and actual disease of this organ has been reported in some cases of sprue The sprue stool is often lacking in pancreatic ferments, but this need not necessarily be due to organic changes in the pancreas, and may be caused simply by disturbed intestinal function Further studies are needed to determine just what part lesions of the pancreas play in the diarrhea of sprue

Sprue does not always appear in its "typical" or "complete" form Bahr[3] speaks also of "incomplete" sprue characterized by the diarrhea alone, and of "tongue" sprue when only the mouth signs occur These varying degrees of intensity are not so peculiar as they are confusing in diagnosis The same difficulties are encountered in pellagra without erythema—pellagra sine pellagra

The question of the etiology of sprue is in a most unsatisfactory state The idea advanced some years ago that sprue is an infectious disease due to some variety of yeast has received new impetus from the studies of various authors, notably Bahr[3] in Ceylon and Ashford[4] in Porto Rico Bahr's researches led him to express conservatively the opinion that the *Monilia albicans* is the cause of the disease Many of his colleagues expressed their inability to accept as the causal agent a fungus common in England, where sprue does not occur It is interesting to note that the *Monilia albicans* is the organism most usually found in the mouths of children suffering from thrush

Ashford's studies seem to corroborate Bahr's evidence in all points save in the species of fungus involved He regards the disease as a moniliasis due to an undetermined species, not heretofore described Further, he believes that the infection is probably derived from bread He has cultivated the organism from a loaf of bread baked in a zone where the disease was endemic He has found it constantly present in the mouth lesions and feces of patients with sprue and in only 3 per cent of healthy persons Complement fixation tests, in which his monilia was used as antigen, have proved negative in healthy persons and encouragingly positive in those suffering from sprue The monilia is pathogenic for small laboratory animals, producing a mycotic septicemia, and, in partially immunized animals intractable mycotic ulcers These results, while highly interesting, are likely to be received with considerable skepticism Much additional work and more definite evidence will be required to establish such a thesis

In this connection it is perhaps somewhat discouraging to recall that the etiology of pellagra has also passed through a "mycotic" stage Many have sought some etiologic connection between fungi and pellagra, both with and without relation to "spoiled" maize Students of pellagra will recall the series of papers by Ceni, who contended that this disease was an aspergillosis—an opinion which, though supported by apparently excellent evidence, has remained unconfirmed

Sprue, while rare in the United States, is a formidable disease in some places Ashford reports that in Porto Rico during the last decade it has made startling advances, and "has now come to occupy a position in

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[1] Wood E J The Occurrence of Sprue in the United States Am Jour Med Sc. 1915 cl 692

[2] Burnet J Are Pellagra and Sprue One and the Same Disease? Med Press and Circular Aug 16 1911 abstr The Journal A. M A Sept 16 1911, p 1014 Stewart C E Tr XVII Internat Med Cong, 1913 Section XXI Tropical Medicine. Editorial Jour Trop Med, Sept 15 1913

[3] Bahr P H Researches on Sprue Tr Soc Trop Med and Hyg 1914 vii, No 5

[4] Ashford B K. Studies in Moniliasis of the Digestive Tract in Porto Rico Am Jour Med Sc. 1915 cl, 680

of discoloration of the skin arise from the diffuse interstitial hemorrhages, and are no evidence of a true gangrene The latter condition was, in fact, obtained in very few of the many soldiers treated by the British commission The nature of the changes produced explains the slowness of the recovery in man, for extensive restoration of the vessel walls must occur before they can bear the strain of vasomotor changes which take place in ordinary forms of activity

There is considerable likelihood that the pressure and constriction contributed by soldiers' boots and other footgear contribute in predisposing a part to the effects of cold They promote the obstruction of the circulation, and when wet may cause a continuous loss of heat from a limb The probable importance of facility for movement in preventing frostbite is illustrated by the fact that few artillerymen are reported as suffering from this condition In the trenches it has often been practically impossible to promote the circulation in the lower limbs by voluntary movements The individuals have been obliged at times to remain for many hours in one position with the feet immersed in mud or water

The British commission, in considering the management of the cases when, immediately after the exposure to cold, the circulation of the limb is returning to normal, points out the need of extreme care Application of heat in these circumstances is believed to favor the production of necrosis Heat reacts to cause congestion in the damaged foot The blood vessels are unable to stand the strain, the edematous swelling and hemorrhagic infiltration may be augmented These facts will be of value even in countries in which there are no military operations, for the effects of cold in causing lesions of the extremities are not unknown in civil life, although they command less attention

THE EARLIEST CHAPTERS IN THE HISTORY OF SURGERY AND MEDICINE

Material for the first chapters in the history of medicine is to be found in the rapidly accumulating information regarding paleolithic man It was a startling surprise for archeologists when it was discovered that the first chapters of the history of human art were to be found among the cave dwellers, who are the earliest ancestors of European man of whom we have any record Data which are suggestive as to the early beginnings of surgery and medicine have recently been described by Osborn,[1] who has provided illustrations as an aid to clearness He frankly acknowledges his obligations to the men of the old stone age by setting forth on his title page "illustrations by upper paleolithic artists"

The earliest attempts at painting so far found consist of simple contours of the hand, pressed against a wall surface and outlined with color Examples of these which have been found are also contributions to the history of surgery, for a number of these hands are partly mutilated In some the fingers are defective, in a few all of the fingers have been amputated, though in none are any joints missing from the thumb In nearly all the cases the fingers lack the two farther phalanges, and the stumps were evidently formed at the end of the proximal phalanx The fact that the thumb is never mutilated has seemed to many archeologists to indicate that the mutilation must have been voluntarily performed for social or perhaps religious reasons, and the mutilation has been compared with similar practices prevailing among Australian tribes

As most of the weapons and implements used by the cave man seem to have been held directly in the hand without the intermediary of a handle, it is easy to understand that crushing and severe injury of the fingers must have occurred during work and hunting expeditions As a rule the thumb would be much more rarely crushed when flints or other implements were held in the hand, than would the fingers Whether or not the cave man had learned by experience that the most useful stump could be made at the end of the proximal phalanx must be a question Whether or not, in addition, the amputation was performed after injury or practiced as a sacrificial or religious rite, this earliest European ancestor of man must have known how to secure union of the skin surfaces above the end of the phalangeal bone Here, then, is the illustrated record of the first surgery The date, according to the conservative estimates of authoritative archeologists, is not later than 25,000 years before our era It occurs in the midst of an immense amount of archeologic material, the place of which in human history has now been rather definitely traced

The medical records of this time are much less direct They consist mainly of figures and engravings of the cave woman She is always represented either as pregnant, by far the most frequent mode of representation, or in association with children Curiously enough, the distinctively female parts are always represented with considerable exaggeration The buttocks particularly are pictured as projecting in some cases to such an extent as to be comparable with the steatopyga (fatty buttocks) of certain African tribes The extreme of this which would represent true steatopyga occurs only once, however, and the other figures are simply corpulent This is the most striking characteristic of all the female figures It is all the more remarkable because none of the male figures which occur in drawing or sculpture are pictured as corpulent On the contrary, the men's figures are lithe, muscular and athletic Manifestly the severe exercise and continuous exertion demanded by hunting kept the man in excellent condition His wife evidently did not do much hard work, but sat around the cave caring for the children and eating large quantities of fat, particularly that great delicacy of the time, the fatty marrow of the bones Many of these bones have been found among the remains in the caves split in such a way as to facilitate the extraction of the marrow

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[1] Osborn H F Men of The Old Stone Age Their Environment and Art New York Charles Scribner's Sons 1915

From these suggestions may be deduced testimony concerning the relations of husband and wife While the father struggled to get a living, "mother," as one archeologist has suggested, "lived on the fat of the land" This is as surprising as the original discovery that the cave man was an artist Instead of the savage we have theorized him to have been, he was eminently human and humane The fact that what is practically obesity became a common characteristic of the women of the time shows that the tendency to put on a superabundance of flesh is not a pathologic quality which has been acquired by the race after many successive generations of overindulgence in fat-producing food, but that it existed from the very beginning whenever there was an oversupply of nutritional materials and at the same time no necessity for hard work The tendency to a corpulent habit of body is a racial quality which manifests itself at any time when conditions favor its development

There is a curious contribution to the psychology of the race contained in the obvious similarity between the art objects of this earliest European ancestor of man and some recent much-talked-of developments in art Osborn calls attention to the fact that certain of the female figurines made in soapstone have all the appearances of prototypes of modern cubist art The engravings made on bones and reindeer horn as well as on ivory are distinctly impressionistic in character With a few lines the cave man artist suggested the appearance of a whole herd of animals, or of some huge animal like the mammoth or the bull bison in an expressive attitude Whether the cave man is to be considered as having anticipated what is ultimate in art progress, or the cubists shall be thought to have reverted to the first art that man ever attempted, must be decided by art critics, who will doubtless line up on the two sides of these questions according to their attitude toward what is most modern in art

It would appear impossible that a human being should develop such devotion to art without paying attention also to the arts of surgery and medicine As yet, however, we have only the hints that have been suggested There seems no doubt that as opportunity is provided for further investigation, an extremely interesting chapter of man's care for himself and his fellows in the midst of accident and disease may be unearthed Some of the bones and skulls which have been discovered show signs of having undergone repair after accidents, and there seems no doubt that a fruitful vein of knowledge may here be opened

THE OPIUM ALKALOIRDS AND RESPIRATION

Few symptoms more frequently call for the intervention of the physician by the use of drugs than those involving the functions of respiration Dyspnea and other forms of distress in breathing, as well as painful and annoying coughs, demand relief which is usually afforded in the severer cases by moderating the action of those portions of the central nervous system that regulate the respiratory processes It is far more common in practice to be called upon to depress the activity of the respiratory center than to excite it, and the drugs par excellence which act as respiratory sedatives belong for the most part to the group of narcotics like morphin Anesthetic or soporific substances of other types may also quiet the respiratory mechanism They are effective in so far as they depress the entire central nervous system The doses required are therefore relatively very large in comparison with those of the opium derivatives which seem to act more specifically on the respiratory center itself Morphin, for example, may exhibit an unmistakable effect on breathing after the administration of doses far too small to produce the more characteristic profound general narcosis

It is in relation to this action on the nervous system associated with respiration that part of the controversy respecting the comparative chemical value of morphin and opium has arisen The statement is frequently made that the galenical preparations of opium are less depressant to the respiration than corresponding quantities of the isolated alkaloid morphin given alone The dried juice of the poppy, which constitutes commercial opium, contains a series of some twenty alkaloids of which morphin is present in greatest amount It is therefore natural to ask in what way the companions of morphin may modify its pharmacologic behavior in respect to each of the important effects which that alkaloid is known to manifest in the body Macht[1] of the Johns Hopkins Medical School has accordingly reinvestigated the effect of opium and its derivatives on the respiration, for, as he remarks, this feature is next to its narcotic and pain-relieving action therapeutically perhaps the most important and toxicologically certainly the most striking The subject is by no means new, nor is the mode in which a drug like the opium alkaloids may affect the respiration necessarily a simple one It may stimulate or depress the medullary respiration center directly, it may indirectly affect respiration by modifying the metabolism and thus altering the need of receiving or discharging the respiratory gases, it may act indirectly through the circulatory changes produced in the nervous tissues, and the action may be altered by mechanical conditions which necessitate a modification of the mode of respiration so that it becomes rapid or shallow, slow or deep, or otherwise

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[1] Macht, D I Action of the Opium Alkaloids, Individually and in Combination with Each Other on the Respiration, Jour Pharmacol and Exper Therap, 1915, vii, 339

Hitherto most of the researches on the influence of drugs upon respiration have been complicated by the necessity of using such accessory experimental devices as anesthesia or tracheotomy or other helps to permit the essential phenomena to be properly recorded Macht has improved the technic of his predecessors in this field by eliminating as far as possible the disturbing factors other than the drugs used Mere inspection is, of course, not sufficient for the purpose of studying respiration for aside from the rate of breathing it often becomes desirable to ascertain the volume of the respired air, its content of carbon dioxid and the alveolar carbon dioxid tension

Macht has confined his attention thus far to seven opium alkaloids morphin, codein, narcotin papaverin, narcein, thebain and cryptopin, of which the first six are the principal constituents of opium in point of quantity The rate of respiration is markedly slowed by morphin, an effect imitated by codein, but to a much lesser degree Narcotin and papaverin decrease the rate only slightly, the other alkaloids do not decrease it at all, and may even increase it These drugs may accordingly be divided into two classes On the one hand is morphin, the prominent sedative alkaloid, which may not interfere with efficient respiration when the dose of the drug is small In contrast with this are narcotin, papaverin, narcein, thebain and cryptopin all of which are distinct stimulants and in large doses are excitants of the respiratory center Codein belongs to the morphin class, though in large doses it may also excite the respiratory center

What might be anticipated in respect to the effect of mixtures of opium alkaloids has been demonstrated experimentally by Macht The action of combinations of them on respiration is a summation of their individual effect While mixtures of morphin and narcotin, of morphin, narcotin, codein, papaverin, thebain and narcein (Faust's mixture), and of all the opium alkaloids (Sahli's mixture), like morphin alone, usually diminish the rate of respiration, they do not diminish the respiration volume, nor do they diminish the ventilating efficiency of respiratory movements to the same extent that morphin does Besides they seem, in moderate doses to leave the excitability of the respiration center almost unaffected

It may be recalled that varied claims have been made in recent years for commercially exploited combinations of some of these opium alkaloids, particularly that they exhibit fewer objectionable effects than does morphin alone It is therefore helpful to have careful studies like these of Macht, which were supported by a grant from the American Medical Association's Council on Pharmacy and Chemistry, for they furnish the basis alike for rational therapeutic procedure and critique of current claims

So if the question were considered as to what results up to the present show with respect to the relative merits of these mixtures and simple alkaloids, the answer depends on what it is desired to accomplish If the object sought is a diminution of labored activity of the respiratory muscles in a given case, it would seem that some of these mixtures, or opium itself, are to be preferred to morphin alone If, on the other hand, it is desired to diminish the excitability of the cough reflex mechanism, it seems that the use of such mixtures would be of less advantage than the use of a simple substance like morphin or codein For if in moderate doses the mixtures cause little or no depression of the respiration center, it may be inferred that the excitability of the cough reflex mechanism will not be reduced by them either The suppression of the cough reflex can be effected, if at all, only by large doses containing so much morphin that the harmful cerebral depression effect would outweigh the desired effect

Current Comment

FASHIONS IN SUICIDE

Last week THE JOURNAL noted what may be regarded as a medical curiosity — the fact that a girl had fallen from a height of over 200 feet and, alighting in a passing wagon loaded with paper boxes, sustained only slight injuries From these she has recovered In the same issue of THE JOURNAL, editorial attention was called to the fact that there seemed to be a fashion in methods of suicide When any method of suicide is adopted and is noted in the newspapers, other suicides are likely to follow in which the same method is adopted As illustrative of this fact, during the next three or four days following the occurrence of the incident reported above, the newspapers announced the deaths of two other persons who also apparently attempted suicide by leaping from tall buildings In their cases, however, fortune did not intervene

DIURESIS AND MILK FLOW

There are observations on record which indicate that the secretion of milk may be influenced by a contemporaneous diuresis Precisely what changes in the composition of the milk may be initiated in this way had not been determined until recently, when the question of the influence of specific diuretics on milk flow was investigated by Steenbock[1] at the University of Wisconsin He remarks that in view of the importance which heretofore unknown constituents of diets and rations have lately assumed, it is of the greatest interest to dissect the various factors normally operative in the body under ordinary conditions of diet Steenbock found that urea, for example, administered in a diuretic dose, is able to decrease temporarily the flow of milk On repeated administration, however, the increased intake of water which follows the impoverishment of the tissues with respect to water content balances the draft for water imposed by the diuretic, and the milk secretion comes back to normal Other diuretic salts, like sodium chlorid, may be entirely unable to depress the milk secretion under normal circumstances, because they call forth a compensating thirst which simultaneously increases the water intake In cases in which diuresis does lead to temporarily decreased flow of milk, the percentage of solids in the secretion is ordinarily increased, the fat being the principal variable In ordinary experience, however, the composition of the milk may be regarded as essentially unaltered by slight variations in renal activity

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[1] Steenbock, H Diuresis and Milk Flow Jour Agric. Research, 1915 v 561

JOURNAL OF CANCER RESEARCH

Number 1 of Volume I of the *Journal of Cancer Research* has just appeared It is edited by Dr Richard Weil of New York, with the assistance of the Editorial Committee of the American Association for Cancer Research, Drs Joseph C Bloodgood, Leo Loeb, Ernest E Tyzzer, H Gideon Wells and William H Woglom In addition to six excellent articles by leaders in research, the first issue contains an abstract of the proceedings of the American Association for Cancer Research The subject of cancer is occupying the time and labor of laboratory workers perhaps more than any other subject The field is a large one, and certainly there is room in this country for a quarterly journal devoted to cancer

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education, public health, etc)

GEORGIA

Fraudulent Canvassers and Collectors—See item in General News of this issue of The Journal, page 521

Personal—Dr Melville C Martin has been elected prison physician of Atlanta——Dr W S Elkin, Jr, has been elected secretary of the board of trustees of Grady Hospital, Atlanta——Dr Howard J Williams, Macon, has been reelected president, and Dr William H Doughty, Jr, Augusta, vice president of the state board of health

Sanatorium News—The annual report of the State Sanatorium, Milledgeville, shows that there has been a gain of 286 patients during the last year, bringing the total up to 4,000 More than 700 patients were admitted during the year The building for colored patients is especially crowded The per capita cost of feeding and clothing the inmates of the sanatorium has been reduced to 41 cents a day——The Fulton County Public Works Committee met in Atlanta, January 13, and took up the matter of an appropriation for the extension and improvement of the Battle Hill Sanatorium for Tuberculosis, and recommended that an appropriation of $10,000 be made for this purpose——The commissioners of Clarke County are formulating a plan to establish a tuberculosis camp for the care of worthy and needy patients, some of whom cannot be kept in sanatoriums

IDAHO

New Officers of Medical Societies—At the recent meeting of the Pocatello Medical Society Dr Joseph V Clothier was elected president, Dr Edward N Roberts, vice president, and Dr F M [illegible] Ray, secretary-treasurer, all of Pocatello——The Boise Physicians and Surgeons Club, at its annual meeting, elected Dr James L Stewart president, Dr John S Springer, vice president, and Dr Edward E Maxey, secretary——At the meeting of the Southern Idaho Medical Association held in Twin Falls, January 20, the following officers were reelected president, Dr Joseph N Davis, Kimberly, vice president, Dr Corwin P Groom, Rupert, and secretary, Dr A Henry Dunn, Twin Falls

ILLINOIS

Lee County Physicians Meet.—At the annual meeting of the Lee County Medical Society held in Dixon, February 3, Dr Nelson M Percy, Chicago, delivered an address on "The Surgical Treatment of Pernicious Anemia," illustrated by the stereopticon The annual election of officers resulted as follows president, Dr Charles C Kost, vice president, Dr William R Parker, and secretary, Dr Edmund B Owens, all of Dixon

Scarlet Fever—On February 2, it was reported that the entire complement of the Great Lakes Training Station, with the exception of the hospital staff, had been removed east to avoid their exposure to scarlet fever, which broke out on the reservation, that the public had been barred from the station and that the post would not be occupied again until the release from quarantine of all the cases in the hospital. Captain Moffett states that there is no epidemic of scarlet fever at the training station and that there are only seven cases at present, with two more under observation All the patients are isolated, and there is no danger

Chicago

Well Known Sister Dies—Sister Mary Dolores, for fifteen years private secretary to Dr John B Murphy and for many years a teacher, died suddenly, January 27, in Mercy Hospital, from heart disease, aged 57

Third Expedition to Germany—The American Surgeons' Expedition Committee, Inc, announces that it will send a third expedition of surgeons and nurses to Germany within a few weeks Dr Harry M Richter, who is to be leader of the party, started for Germany, February 2

Robert Koch Society—The Robert Koch Society will hold a meeting, February 17, at the Morrison Hotel at noon The subject for discussion will be "Tuberculosis of the Kidney" The pathology of the subject will be taken up by Dr Dallas B Phemister, the symptomatology by Dr Daniel N Eisendrath, and the diagnosis and treatment by Dr Herman L. Kretschmer

Municipal Health Magazine—Health Commissioner Robertson has found a philanthropist to finance his project of a municipal health magazine for a year, at a cost of $1,000 a month The aim of Dr Robertson is educational and the magazine is to be given free distribution, with an issue of about 100,000 copies a month The first issue will make its appearance in March and fourteen physicians and surgeons will be appointed as an editorial staff and advisory health board

Personal—Lieut-Col Jacob Frank, surgeon-general of Illinois, was elected president of the Army and Navy Club of Chicago at its annual meeting, February 7——Dr Frank S Churchill has been elected vice president of the Infant Welfare Society and Drs W A Evans, Caroline Hedger and Clifford G Grulee were elected members of the board.——Drs Anna Dwyer and Effa B Davis have been made members of a committee to draft a constitution and by-laws for a commission recently formed to study the wayward girl problem

Historical Society Meeting—The Society of Medical History of Chicago will meet in the walnut room of the Hotel Sherman, February 15, at 6 30, when papers will be read by Dr Horace Manchester Brown, Milwaukee, on "Must the History of Syphilis be Rewritten? Ancient Facts and Modern Knowledge", by Dr A Levinson on "A Medical Cyclopedist of the Seventeenth Century," and by Dr Mortimer Frank, Chicago, on "The Origin of Syphilis," a paper which was read at the 1913 Congress of Medicine in London by Dr Karl Sudhoff of Leipzig, and translated by Dr A Alleman, assistant librarian of the surgeon-general's office, Washington, D C

KENTUCKY

Prevention of Blindness—A bill is to be introduced before the coming general assembly calling for an appropriation of about $8,000 to be used for the prevention of blindness and for the employment of a state oculist to serve jointly with the United States Public Health Service and the State Board of Health

Interns Resign—Nine of the twelve interns at the Louisville City Hospital tendered their resignations to the board of safety January 27, because they objected to catheterizing male patients, a duty which has heretofore been performed by orderlies The board of safety upheld the hospital committee in its contention and the places of the mutineers have been filled

Personal.—Dr Arad A Simons Cloverport, is ill in St Joseph's Infirmary ——Dr Henry P Sights, superintendent of the Western State Hospital, Hopkinsville for the last six years has it is said announced that he will not be a candidate for reappointment——Drs George T Fuller, Mayfield, and Charles Z Aud Cecilia have been reappointed members of the State Board of Health to succeed themselves——Dr Henry Enos Tuley has succeeded Sam P Jones as president of the Iroquois Life Insurance Company ——Dr John F Jessee Waddy, was seriously injured when his automobile skidded at the foot of a long hill and crashed into an iron bridge——The office of Dr James B Smith, McKinney, was burned January 5——Dr Joseph F Dusch, Louisville was seriously injured January 1, when he drove his automobile against a telegraph pole to avoid a collision

MARYLAND

Fraudulent Canvassers and Collectors—See item in General News of this issue of The Journal, page 521

Personal—Dr George Y Everhart, Hillsdale, is reported to be critically ill at his home.——Dr J Oliver Purvis has been elected secretary of the Anne Arundel Branch of the Maryland Society for the Prevention and Relief of Tuberculosis

Mild Outbreak of Smallpox—Smallpox has again broken out in Hagerstown, six cases having been reported, of which four patients are practically recovered Dr Caleb W G Rohrer, Baltimore, assistant chief of the Bureau of Communicable Diseases of the State Board of Health, has been to Hagerstown and investigated every reported case The disease was brought to the town from Roanoke, Va

Suit Over "Autolysin"—It is stated in New York newspapers that a suit has been entered in the Supreme Court of New York by Dr Silas P Beebe and Dr A Judson Quimby against Dr J Wallace Beveridge, asking that the partnership which they had formed with Dr Beveridge for the manufacture and sale of "autolysin" be dissolved and that a receiver be appointed to take charge of the concern

Merger Ratified—The articles of merger between the College of Physicians and Surgeons and the University of Maryland were ratified by the regents of the university, January 5, and by this act the combination between these schools becomes a legal fact The following members of the faculty of the College of Physicians and Surgeons were taken into the board of regents of the university Drs John W Chambers, Harry Friedenwald, Archibald C Harrison, Standish McCleary, William F Lockwood, William S Gardner, Cary B Gamble, Jr., and George W Dobbin

Proposed Hospital for Southern Maryland—A bill has been introduced in the General Assembly for an appropriation of $10 000 for the erection of a hospital in Charles County, to be known as the Southern Maryland Emergency Hospital The measure calls for an additional appropriation of $3 000 a year for maintenance and provides also that the $10 000 appropriation is not to become available until the directors of the institution certify that an additional $5,000 has become available, either through private donation or by levy made by the county commissioners, or both

MASSACHUSETTS

State Health Officers Meet.—At the annual meeting of the Massachusetts Association of Boards of Health held in Boston January 27, the following officers were elected president, Dr Frank A Woods, Holyoke, vice presidents, Drs Francis X Mahoney Boston, and William W Walcott, Natick, secretary, Dr Francis H Slack, Boston, and treasurer, Dr Francis G Curtis Newton

Hospital News—Harvard University Medical School is to build a maternity hospital in the center of the present medical school group The building will cost about $300,000——The Infants' Hospital on VanDyke Street in the center of the Harvard medical buildings was formally opened with exercises and a reception The speakers were Dr Charles W Eliot, president emeritus of Harvard University, Drs J Collins Warren John Lovett Morse and Clarence J Blake

Medico-Military Course at Harvard—The president and fellows of Harvard University have voted to institute a course in military medicine at Harvard Medical School This course is to be given a trial, beginning with the second half of the academic year Major Weston P Chamberlain, M C, U S Army, an alumnus of Harvard Medical School, has been appointed lecturer on military medicine

Personal—Dr William A Hinton has been appointed pathologist to the Boston Dispensary and placed in charge of all its laboratory work, succeeding Dr Sarah E Coppinger ——Dr James Lloyd Wellington, Swansea, the oldest alumnus of Harvard University, has celebrated his ninety-eighth birthday anniversary——Dr Richard C Cabot, Boston, has been elected head of the advisory board for Massachusetts of the New England section of the National Civic Federation—— Dr Frank A Woods, Holyoke, has been appointed medical examiner for the Third Hampden District, succeeding Dr William J Teahan, Holyoke, deceased——Dr George W Dow, Lawrence has been reappointed medical examiner and Dr Victor A Reed, Lawrence, associate medical examiner of Essex County——Dr George P Norton, Fitchburg, has been appointed medical examiner succeeding Dr Frederick H Thompson——Dr Morton Prince, Boston, has returned after war service abroad

MINNESOTA

Fire at Mayo Clinic—Fire at the Mayo Clinic Building, Rochester, January 20 caused damage estimated at $25,000, fully covered by insurance, and the Mayo Library Building suffered minor damage by smoke

Society Reorganized—The Carlton County Medical Society reorganized Dec 29, 1915, with the following officers president, Dr James Fleming, Cloquet, vice president, Dr Sylvester S Shannon, Barnum, and secretary-treasurer, Dr Franklin W Raiter, Cloquet

Minnesota High in Public Health Efficiency—Minnesota ranks fourth in the list of states in efficiency in public health work On a basis of 1 000 points, Minnesota stood fourth with 754 points The recommendations of the survey were that the Minnesota Health Board should retain its independence, that it should be allowed more money for extension work, that suitable laws should be passed covering water supplies and sewage disposal, and that there should be better sanitary administration in the small towns and rural districts of the state with especial reference to the spread of contagious diseases, infant mortality, poor water and unclean milk.

Reportable Diseases.—Tetanus, septic sore throat and favus have been added to the list of communicable diseases required to be reported to the State Board of Health More strict regulations have been adopted by the State Board of Health in regard to quarantine Milkmen are now forbidden to take anything away from a house under quarantine and must deliver milk in packages which can be destroyed as soon as used Laundrymen must not take away bundles of laundry In towns where there is no laboratory service, the quarantine period for diphtheria is fixed at six weeks Proprietors of dairy farms, creameries and milk stations are required to report to local health authorities cases of communicable diseases among employees and their families

MISSOURI

Loving Cup Given.—Dr Charles R Woodson, St Joseph, president of the Missouri State Medical Association was presented with a loving cup by members of Buchanan County Medical Society at the annual banquet held at St Joseph, January 26

Personal.—Dr Owen A Smith, Farmington, has been appointed Councilor for the Twenty-Fifth District to fill the vacancy caused by the removal from the district of Dr Timothy T O'Dell, Ellington——Dr John B Fleet, New Franklin, is suffering from a dislocated shoulder and several fractured ribs——Dr Charles H Temple, Glasgow, is in a hospital at Kansas City, suffering from an attack of paralysis——Dr Zebulin M Hampton, Centralia, has been ill for some time with paralysis agitans

St. Louis

Personal—Dr Franklin H Albrecht has been appointed orthopedist at the Deaconess Hospital——A life-size bronze tablet of Dr Frank J Lutz was presented to the St Louis Medical Society by members of the society, January 29, in recognition of Dr Lutz' services as librarian for the past seventeen years ——Dr Malvern B Clopton has returned from the zone of war ——Dr William H Engelbach delivered an address before the Fort Madison, Iowa, Medical Society, January 20, on "Internal Secretions"

NEW MEXICO

Support for the State Board of Health—The *New Mexico Medical Journal,* in the January number, comments on the prevalence of infectious diseases throughout the state, and on the statement of Dr Lucien G Rice, Albuquerque, president of the state board of health, that 500 deaths from diphtheria alone have occurred in the upper Rio Grande valley in the past three years It is said that no doubt twice that number have occurred in the whole state, besides many deaths from scarlet fever and the other infections That a better showing has not been made in the death rate from these diseases is said by the president of the board to be because "The law confers no jurisdiction and legislature has made no appropriations" The journal corroborates this statement, and while praising the personnel of the present board, says that the physicians of the state should get busy and see that the legislature provides a board of health in fact as well as in name, with ample funds to carry out its proper functions It is said that the state has a sanitary board which carries out stringent regulations in regard to sheep and cattle, but that the human part of the population is not given proper consideration

NEW YORK

New Sanatorium—The chairman of the Chemung County Board of Supervisors has appointed a committee to take charge of the arrangements for the construction of a new tuberculosis hospital at Elmira More than $30,000 is in hand for this purpose

Tribute Paid to O'Connell—At the session of the senate January 17, an eloquent tribute to the memory of Dr Joseph J O'Connell, health officer of the port of New York, was paid by Senator Cullen, and at the close of his address the senate adjourned as a mark of respect

Antityphoid Vaccination—At Rochester it is said the health officer, Dr George W Goler, has issued an order that all persons connected with the dairies supplying milk to Rochester must be vaccinated against typhoid fever before the dairy licenses will be renewed Opposition to the measures will not be regarded, as it is said by the health officer that it not only protects the persons themselves, but also protects the public

Personal—Dr Louis J Beyer has been elected president, Dr Harold W Cowper, vice president, and Dr Lesser Kauffman, secretary of the staff of the Buffalo Emergency Hospital ——Dr Magda Telkes, New York City, has been engaged to supervise the medical inspection work among women applicants at the Schenectady plant of the General Electric Company ——Dr Henry C Wilber, for more than thirty years health officer of Pine Plains, has retired and has been succeeded by Dr John C Merchant

New York City

Pathologists Elect—At the anniversary meeting of the New York Pathological Society, January 12, Dr Francis C Wood was elected president, and Dr J Gardner Hopkins, Brooklyn, secretary and editor of the *Proceedings*

Clinical Meeting—A clinical meeting of the Hospital for Deformities and Joint Diseases was held, February 8, at which papers were read on "Differential Diagnosis of Knee Joint Conditions, Description of Sayre, Frauenthal and Other Knee Splints," by Dr Samuel A Jahss and another on "Painful Feet, Skin Lesions, Nail Lesions, Disease of the Veins and Arteries, Disease of the Nerves, Infection of the Foot," by Dr Harry C Stein

Personal—Dr Lysander P Holmes has been appointed third assistant superintendent of Johns Hopkins Hospital, Baltimore ——Dr E Warren Presley, Greatkills, has been appointed adjunct visiting physician to the Seaside Hospital, New Dorp, Staten Island ——Dr Mathias Figueria, consulting physician to St Catherine's Hospital, Brooklyn, for thirty-five years, was the guest of honor at a testimonial dinner given by the staff of that institution, January 25 Dr James C Kennedy, Brooklyn, officiated as toastmaster

Another Newspaper Will Decline Quack Advertisements—A recent *Bulletin of the Department of Health* calls attention to the fact that the *Evening Telegram* has announced its intention to decline to publish advertisements of medical specialists, extends its congratulations to the *Evening Telegram* and commends its action to other newspaper proprietors The opinion is expressed that the closure of the columns of this prominent daily will tend in a great measure to eradicate the evil of quack advertising in New York newspapers

New Orthopedic Hospital Opened—The new home of the New York Orthopedic Dispensary and Hospital, on East Fifty-Ninth Street, which has cost nearly one million dollars, was formally opened on January 31 with an address by Col Theodore Roosevelt, whose father was one of the founders of the hospital fifty years ago Dr Russell A Hibbs, in his address, stated that during 1915 the dispensary had treated 10,313 persons and that 630 had been treated in the hospital, and that although $1,000,000 of the $1,500,000 needed had been raised, until the remaining $500,000 was forthcoming, three of their wards must remain vacant with 150 patients waiting for beds

Illness Census—As a part of the intensive work being conducted in Health District No 1, an illness census will be taken on February 19 On this day a corps of health department nurses will be detailed to call on every family living in the district and secure accurate information concerning the number, age, sex, and occupation of every member of the household, together with information concerning those who are ill, the nature of the illness and other facts pertinent to an inquiry of this kind The information thus obtained will be tabulated and studied by the Division of Statistical Research of the Bureau of Records and will subsequently be published in the form of a bulletin

Bacteriologic Examination of Toy Whistles—The department of health having had its attention directed to the practice of peddlers of putting toy whistles to the mouth for purposes of demonstration, made an examination of twelve whistles purchased from push carts Five of the whistles had metal and seven wooden mouthpieces The average number of bacterial colonies developing from the wooden whistles was ninety-nine and from the metal whistles forty-five A large variety of micro-organisms was found In nine instances streptococci were isolated, two of them of the hemolyzing variety These streptococci were tested on mice to determine their virulence Eight of the nine mice died, five within twenty-four hours, two within the next twenty-four hours, and one four days after inoculation

Medical Students Low in Scholarship at New York University—With the opening of the new ferm at New York University, it was announced that eighty men had been dropped, of these, twenty-four were medical students That the proportion of medical students dropped is higher than that in other departments of the university is explained by the fact that medical men in the past have been allowed to select their own subjects for entrance examinations within certain limits It is hinted that this occurrence will result in a stiffening of the entrance requirements for the medical school The medical department of the university is overcrowded There are at present accommodations for only 135 new students each year, and yet 200 registered for the preparatory course last fall and 176 successfully passed their midyear examinations Should all pass their final examinations the medical school will be unable to care for them As a safeguard against such a contingency, a rule has been passed that hereafter no man may enter the medical school with a condition in any subject

NORTH CAROLINA

Sanatorium Opened—Dr Addison G Brenizer, Jr, opened the Brenizer Sanatorium, Charlotte, January 12

Fraudulent Canvassers and Collectors—See item in General News of this issue of The Journal, page 521

Vaccine for General Distribution—The state board of health through its laboratory of hygiene, Raleigh, announced that it now has in stock, for general distribution to the profession, smallpox vaccine made by the Noguchi method in the state laboratory, Raleigh

Precedent in County Sanitation—New Hanover County has established what means to be altogether an innovation in county sanitation Arrangements have been made to lend rural residents funds for the installation of water and sanitary convenience in their homes The money is to be repaid the county on long time with 6 per cent interest

Children's Bureau to be Established—Dr J W McNeill, health officer of Cumberland County and Fayetteville, announces that at the beginning of April the authorities of the United States Public Health Service will establish in that city and county a children's bureau for the study of diseases and other conditions pertaining to child life The work will be in charge of Dr Frances Sage Bradley, Washington, D C, of the Children's Bureau

Smallpox Regulations—The commissioners of Catawba County are reported in the daily press to have passed rules forbidding all persons who have had smallpox or who have been in contact with a case of the disease, from appearing on public highways within six weeks after such disease or contact" This it is stated is in order "to protect the schools of the county and prevent the further spread of the dread disorder which has been so prevalent in the county" A fine of $50 with imprisonment for thirty days is the penalty of violation of these regulations

Personal—Dr James M Northington, Boardman, was given a complimentary banquet by his associates January 23, preparatory to his departure for Minneapolis, where he has accepted a position as teaching fellow under the Mayo Foundation in the University of Minnesota——Dr Robert R Sellers, Rutherfordton, has removed to Hariman where he will be in the medical service of the C C and O Railway ——Dr and Mrs Culbert N Roberts, Lenoir have returned from a trip to Florida and Cuba——Dr S Westray Battle Asheville, chairman of the North Carolina Belgian Relief Commission, recently returned from European battlefields and asks that contributions for this charity be sent to him at Asheville—Dr Ransom L Carr, Rosehill, was operated on for appendicitis in St Luke s Hospital Richmond, Va, January 12, and is reported to be convalescent——Drs John E. Ray Jr, Raleigh, Houston B Hiatt, High Point, and John W MacConnel, Davidson, have been commissioned as first lieutenants, N C N G——Dr Cyrus Thompson Jacksonville, has been nominated for governor by the Republican party——Dr Charles P Bolles, Jr, for three years a member of the Wilmington Board of Health, has resigned

PENNSYLVANIA

Personal.—Dr John S VanVoorhis is reported to be seriously ill at his home in Bellevernon——Dr Charles E Heller, Williamsport is reported to be seriously ill at his home.——Drs John Farrell, West Chester, and Edward Kerr, East Downingtown, retiring members of the staff of the Chester County Hospital gave a dinner at the West Chester Golf and Country Club to their associates, January 19—— Dr Henry Eastman, Pittsburgh, is reported to be seriously ill with pneumonia in the West Penn Hospital

Scarlet Fever—January 22 it was reported that scarlet fever had appeared for a second time in the University of Pennsylvania Earlier in the month two students died from the disease. At present one student, sent home convalescent from the university hospital on account of an injury in the Bowl' fight, became ill with scarlet fever, said by his physicians to have been contracted, probably, in the hospital A nurse in the same ward is now confined in the Municipal Hospital on account of the disease and two other nurses who attended the student in the wards are isolated and under observation

Philadelphia

Dr Baker in Philadelphia.—A dinner was given by the alumni of the Women s Medical College of Pennsylvania, January 26, in honor of Dr S Josephine Baker, chief of the Department of Child Hygiene of New York

Personal.—Dr Frank C. Abbott, of the attending staff of Jefferson Hospital, has been commended by the Duchess of Bisaccia for his services in the war zone——Drs Seymour D W Ludlum, Samuel D Ingham, Sherman F Gilpin and Albert C Buckley have been appointed visiting physicians to the psychopathic division of the neurologic department of the Philadelphia General Hospital

Woman's Medical College Fellowship—The Woman s Medical College has established a fellowship amounting to $1,000 to be awarded annually to any medical woman of special ability who, following the undergraduate course, has completed at least one year of hospital service, including work in maternity wards, and one year of further practice The amount is to cover twelve months of special work as Fellow in Obstetrics, with the condition that the holder of the fellowship shall thereafter continue the practice of obstetrics

A Century and a Half—The one hundred and fiftieth anniversary of the founding of the Medical School by John Morgan at the University of Pennsylvania was celebrated by a dinner given by the Society of the Alumni of the Medical School at the Bellevue Stratford, February 4 More than 250 physicians were present Harvard University Medical School sent its Dean, Dr Edward H Bradford Dr John K Mitchell was toastmaster, and speeches were made by Dr Harry Lane, United States Senator from Oregon, Dr Alonzo E Taylor, provost, Edgar Fahs Smith, and Dr Charles K. Mills

SOUTH CAROLINA

Fraudulent Canvassers and Collectors—See item in General News of this issue of The Journal, page 521

Large Appropriation Recommended—Governor Manning delivered an address before the General Assembly, January 14 in behalf of the State Hospital for the Insane and recommended that the appropriation of $320,000, asked for by the Board of Regents, be made

Personal—Dr Robert Lewis, assistant biochemist at the United States Pellagra Hospital, Spartanburg, has been elected professor of physiology in the University of Colorado, Boulder——Dr Benjamin O Whitten, Seneca, has been appointed a member of the house staff of the State Hospital for the Insane, Columbia

New Hospitals—The Steedley Hospital Company has been incorporated at Spartanburg with a capital stock of $50,000, and received its charter January 22——Physicians and business men of Lancaster met, January 15, to discuss the need and practicability of a hospital in Lancaster The work of formulating plans for the hospital has already been commenced

New District Society Officers—The twelfth semiannual meeting of the Second District Medical Association was held in St Matthews, January 25, and Dr Linnaeus C Shecut, Orangeburg was introduced into office——The First District Medical Association held its semiannual meeting at Waterloo, January 19, and elected Dr Lionel M Stokes, Waterloo, president, and Dr John B Johnson, St George, vice president, and reelected Dr Joseph S Rhame, Jr., Charleston, secretary-treasurer

Pellagra—On January 30, on the occasion of a visit of Dr Joseph Goldberger and Dr J W Babcock to the Epworth Orphanage at Columbia, it was found that all of the hundred children who had pellagra in September, 1915, were well The children who had had the worst cases were found to be healthy, and all evidence of the disease had disappeared The improvement followed the adoption in the orphanage of a better balanced ration, according to the theory of pellagra held by the officers of the Public Health Service

TEXAS

State Society Arrangements—Elaborate arrangements are being made by the Galveston Medical Society for the annual convention of the State Medical Society of Texas, which will be held in Galveston, May 9 to 11 Dr Marvin L Graves is chairman of the local committee of arrangements

Clinical Day for County Society—The Dallas County Medical Society held its first clinical day at Dallas, January 20 Clinics were held between 9 a m and 4 p m at the Parkland Hospital Baptist Sanitarium, Polyclinic School and St Paul's Sanatorium Hereafter these clinics will be held on the third Thursday of each month

Hospital News—The government has made arrangements to erect a surgical pavilion at Fort Sam Houston, San Antonio—Ground has been broken for the new Ralston Sanatorium at El Paso The building will be four stories and basement in height and will cost about $50,000——A free city dispensary was opened at Dallas, January 14, by the city health department in connection with the Emergency Hospital——A movement has been started, endorsed by every physician in the city, to establish a hospital for Oak Cliff, Dallas, and a special committee of the Oak Cliff Medical and Hospital Association will present an outline of plans to the Dallas County Medical Society and later to the Chamber of Commerce and Manufacturers Association for ratification ——Tyler and Smith counties have jointly agreed to build a small hospital in Tyler and contracts have already been let and building will begin at an early date

Typhus—The death of a Mexican recently from Piedras Negras of typhus in the county hospital, January 16, prompted the United States immigration officials to take stringent measures to prevent the spread of the disease. A A. Surg John W Tappan U S P H S., El Paso, the immigration medical officer, received instructions from Dr Claude C Pierce, senior surgeon, to begin disinfection by gasoline and the baking of clothes of all suspects or contacts A house-to-house canvass showed that there was no typhus in Juarez, just across the river from El Paso——According to the *San Antonio Express*, Dr Pierce, after an investigation of the typhus situation along the Mexican border, found only three cases at Laredo One of these patients had died At Brownsville and other points and in Southern Texas no cases were found, although there had been a rumor of many cases At Monterey Dr Pierce found only a few cases, contrary to the reports made

VIRGINIA

Fraudulent Canvassers and Collectors—See item in General News of this issue of The Journal, page 521

Improvements for Epileptic Colony—The new Halsey-Jennings Building at the State Epileptic Colony, Madison Heights, which was designed for a combined infirmary and boys' dormitory, has just been put into use and the additional accommodation relieves the congestion previously felt There are now 340 residents in the colony

WISCONSIN

Rhinelander Gets Laboratory—The state board of health has decided to establish a branch hygienic laboratory at Rhinelander, for which $5,000 was appropriated by the last legislature

Pediatrists in Milwaukee Organize—The Milwaukee Pediatric Society was organized at a meeting held January 17, and the following officers were elected president, Dr Lorenzo Boorse, vice president, Dr J Gurney Taylor, secretary, Dr G J Kaumheimer, and treasurer, Dr Robert C Brown

New Hospital Dedicated—The formal dedicatory ceremonies of the new hospital erected by the Wisconsin Deaconess Association in Green Bay were held January 18 and 19, and were participated in by officers of the Deaconess' Association, members of the Methodist clergy of the state, and others

Cost of Smallpox—At Manitowoc it is said bills for $3,000 have been presented to the city for caring for smallpox patients during the recent epidemic This is in addition to the cost of supplies for quarantined families, and is in contrast with the $800 which it cost the city for free vaccination after the epidemic started

Sanatorium News—The Marathon County Board of Supervisors has decided to locate the county antituberculosis sanatorium on the eastern part of the county asylum farm in the town of Settin——Willow Brook, the Kenosha Sanatorium for Tuberculosis, was opened February 1 Miss Alice Gonzenbach, formerly superintendent of the Greenfield Sanatorium, has been appointed superintendent——The State Tuberculosis Sanatorium at Wales now has an official post-office known as "Statesan"

New Board Officers—At the annual meeting of the state board of health Dr William F Whyte, Madison, was reelected president, and Dr Edward S Hayes, Eau Claire, was reelected vice president The rules governing measles, meningitis and diphtheria were amended For measles it was proposed that in addition to placarding the house, the patient must be isolated fourteen days, children in the household who have not had measles should be secluded from school, children in the family who have not had measles can return to school fourteen days from the last exposure providing they take up their residence in other homes The rules for meningitis and diphtheria were so changed as to arrange for the liberation of adults after thorough disinfection of persons and clothing

Personal—Dr Wallace P Smith, prison physician at Waupun, was attacked with a bottle by a convict, January 28, and sustained severe cuts and bruises of the face——Dr Emil S Christensen, Two Rivers, who has been seriously ill with septicemia, is reported to be convalescent——Drs John Diamond, Crandon, and Raymond G Arveson, Frederick, have formed a partnership at Frederick and will erect a hospital in the spring——Dr Ira F Thompson, Rhinelander, has been made deputy state health officer in charge of District 4, with headquarters at Eau Claire——Dr Louis Dorpat, Oakwood, has been appointed deputy state health officer for the Rhinelander District with headquarters in that city——Dr Emil T Lobedan, Milwaukee, has been elected president and Dr Gustavus I Hogue, Milwaukee, second vice president of the Wisconsin Association for the Blind——Dr Gustave C Hoyer, Milwaukee, has been reelected medical director of the Aid Association for Lutherans——Dr George N Hidershide, Arcadia, is reported to be critically ill in the Winona, Minn, General Hospital after an operation for acute appendicitis——Dr Glenford L Bellis, superintendent of the Muirdale Sanatorium, Wauwatosa, has been made a member of the Committee on Standards of Diagnosis of Tuberculosis in Children

GENERAL

American Chemist Wins Perkins Medal—The Perkins medal for distinction in industrial chemical research has been presented by the Society of Chemical Industry to Dr Leo H. Baekeland, a member of the Naval Consulting Board

Photographs of Physicians—Several letters to The Journal report that a prominent New York "picture service" corporation is asking physicians to sit for photographs to be used in The Journal The Journal has not authorized such requests

Federation Elects—The following were elected officers of the Federation of State Medical Boards at its annual meeting, February 7 president, Dr David A Strickler, Denver, vice president, Dr Walter P Bowers, Boston, and secretary-treasurer, Dr Walter L Bierring, Des Moines (reelected)

Medical Education Meeting—A joint conference of the Council on Medical Education, Council on Health and Public Instruction, Federation of State Medical Boards, and Association of American Medical Colleges was held in Chicago, February 7 and 8 Proceedings will be reported in a later issue

New Quarantine Director—A Surg-Gen Leland E Cofer, U S P H S, has been designated by Surgeon-General Blue to take over the Quarantine Station of the Port of New York. The quarantine offices are to pass temporarily from state control to the United States Public Health Service, until the New York legislature can enact legislation designed to transfer the station absolutely to federal control

Conservation of Rural Health—The secretary of the treasury has applied for a special appropriation of $100,000 for the field work of the United States Public Health Service This service has for its object the wide application of methods of conserving the health of the people These field investigations are not confined to any one section, are directed along many lines and have to do with malaria, typhoid fever, tuberculosis, trachoma and many other diseases

Monument to Leader of Campaign Against Malaria—Dr. William S Thayer, Baltimore, requests contributions for the erection of a monument to Prof Angelo Celli, Rome, the founder and the animated and guiding spirit of the foundation of the Society for the Study of Malaria, which instituted the great Italian campaign against this disease It is contemplated that this monument will stand on the Roman Campagna, the field of the studies and the object of the most loving care of Professor Celli on the spot where he redeemed man and earth from the scourge of malaria

Strong Joins International Corporation—Dr Richard P. Strong has accepted the position of vice president to the American International Corporation This corporation recently formed with a capital of fifty million dollars is designed to procure, explore, purchase or lease, develop and operate lands and mercantile business in any part of the world Dr Strong will attend to the sanitation districts in which the companies development work is situated involving the construction of new sewerage and water supply systems A number of young men will be employed to work under Dr Strong's direction in this way

New Officers for Medical College Association—At the annual meeting of the Association of American Medical Colleges in Chicago, February 8, the following officers were elected president, Dr John L Heffron, Syracuse, N Y, vice president, Dr William S Carter, Galveston, Texas, secretary-treasurer, Dr Fred C Zapffe, Chicago (reelected), and executive council, Drs William J Means, Columbus, Ohio, Isadore Dyer, New Orleans, Samuel W Lambert, New York City, Charles R Bardeen, Madison, Wis, and F C. Waite The association passed a resolution that, beginning with January, 1918, two years' college work will be required as an entrance qualification for the colleges of the association

Bequests and Donations—The following bequests and donations have recently been announced

Episcopal Hospital and German Hospital Philadelphia each $1,000, by the will of the late Daniel W Grafley

Hahnemann Hospital Philadelphia $10 000, by the will of Mary L Cooper, Narberth Pa

Grand View Hospital, Allentown Pa, a donation of $12 000, by Cressman Brothers

St Anthony s Hospital Oklahoma City for the enlargement of the institution and the installation of a medical and research laboratory, $12 000 in the first day of the campaign

Presbyterian Hospital Chicago $50 000 Chicago Foundlings Home Home for Destitute Crippled Children Chicago Orphan Asylum and United Charities, Chicago each $10 000, by the will of Thomas Templeton

The Servants for the Relief of Incurable Cancer New York City, $2 000 by the will of Kate Gilligan

St John's Guild, New York City, $2 000 by the will of George W Mabie

Fraudulent Canvassers and Collectors—We have repeatedly published warnings against fraudulent canvassers and collectors—sometimes in the Editorial department sometimes in Queries and Minor Notes, and sometimes in News In spite of these repeated warnings, some of our readers are still allowing themselves to be swindled The scheme frequently followed is one that appeals to those who are ever ready to help a fellow mortal A young man shows a printed blank indicating that he is a 'contestant" for a prize in the form of a scholarship in an educational institution, to be awarded to the one who sends in the most business in a certain time Again we suggest that those who would avoid being swindled should not pay money to traveling men whom they do not personally know Checks should not be made payable to any person, but to the concern the person claims to represent, and even then one should be very sure that there actually is such a concern Money should not be paid to any one claiming to represent the American Medical Association unless he carries credentials bearing the signature of the Editor and General Manager and the seal of the Association

Malaria.—The surgeons of the U S Public Health Service, in their study of malaria in the South, have found that in certain sections 4 per cent of the inhabitants have the disease This estimate is based on 204,881 cases reported during 1914 According to the report of the surgeon-general of this service, 13 526 blood specimens were examined during the year, of which 1,797 were positive for malaria The infection rate among the white persons was found to be more than 8 per cent, and among the colored, 20 per cent In the Yazoo Valley, in two counties, 40 out of 100 persons presented evidence of malaria The surveys conducted by the service have resulted in gratifying reductions of the disease through the efforts stimulated by the survey, in thirty-four places in nearly every southern state In some places the reduction was from 15 per cent in 1914 to 4 or 5 per cent in 1915 An important feature of this study of malaria was the discovery that malaria is probably not carried through the winter in the bodies of the malarial mosquito, so far as that section is concerned Mosquitoes dissected and examined during the early spring months in 2,000 instances showed no infection, and none was discovered until May 15 The conclusion is that malaria carriers should be treated during the winter and spring with quinin so that chronic sufferers may not renew the infection in mosquitoes Quinin is still the best means of curing the disease and preventing infection, but destruction of the breeding places of the malaria mosquito is necessary for eradicating the disease This should be done by draining, filling, regrading of streams, oiling of breeding places, the stocking of streams with top minnows, etc

FOREIGN

Arce Elected Fellow of London Sanitary Institute—The *Cronica Medica* of Lima, Peru, reports that Dr Julian Arce is the first South American to be elected fellow of the Royal Sanitary Institute of London, as recently occurred

High Fee for German Surgeon.—It is reported from Berlin via London that an aide-de-camp of the sultan arrived in Berlin, January 30, bearing a fee of about $30,000 for Dr Israel, who recently operated on the Turkish sovereign

New Medical School.—According to *Commerce Reports*, the president of Venezuela has issued a decree for the establishment of a school of medicine in Caracas A decree of the governor of the federal district provides for a free dispensary in Caracas, to be established and maintained by public funds, and to operate under the supervision of the general inspector of the civil hospitals of the district

Vienna Institute for Study of Food Problems—A Vienna manufacturer has given $100,000 to found an institution to study the technical side of nutrition for the people, by correlating the findings of organic chemistry, biology, physiology, etc It is to be called the Institut für Volksernährung, and preliminary negotiations are already under way with specialists in these lines in Austria, Hungary and Germany

Study of Criminology in Chile—The minister of justice has appointed a commissioner to study crime in Chile and to report to the government his recommendations for measures to prevent crime, reform delinquents, and for the classification and separation of prisoners A laboratory of experimental psychology is to be established in the penitentiary at Santiago and physicians in penal institutions will be required to furnish information or data in connection with the work

Professional Secrecy Need Not Extend Beyond Death—According to a German exchange, a Berlin court recently decreed that a physician should give his testimony as to the mental soundness of a patient whose will was being contested on the grounds that the man had been mentally incapable The physician declined to testify, but the court enjoined him to speak freely, saying that the death of his patient had released him from the obligation for professional secrecy as long as the matter was not one that concerned his former patient's good name or reputation

Sanitation in Haiti—Officers of the Medical Corps of the Navy attached to the Marine Brigade now on duty in Haiti are making a careful sanitary survey of Port au Prince, and have made certain specific recommendations as a result of which the water supply is more effectively guarded, the markets and sources of food supply are more rigorously inspected and controlled and the removal of refuse in the city streets, cleaning grading and guttering, is actively being carried on The island of Santo Domingo has been notably unhealthy during its entire history, but owing to the rigid sanitary methods imposed under the direction of the naval medical officers, the reports from the marines' camps from the north and south coasts of the island and the interior indicate a low sick rate

Deaths in the Profession Abroad—Tiburcio Padilla, one of the leaders of the profession in Argentina, ex-governor of his province, Tucuman, aged 80——P Beyers of Breda, a member of the Netherlands ambulance sent to Serbia, cooperating with the Austrian ambulance——R. Heigl, chief of the public hospital at Coblenz, succumbed to infection acquired at an operation, aged 54——F L von Neugebauer of Warsaw, noted for his numerous articles on gynecologic subjects but especially for his study and publications on hermaphroditism and allied conditions——L R Lorentzen of Copenhagen, president for a number of terms of the Danish Medical Association, aged 63 He took up surgery at first but a bile-duct trouble soon after 40, causing the expulsion of the gallbladder, compelled him to give up surgical work——M De Cristoforis, to whose efforts is due in large part the leading place taken by Milan in public hygiene, in prophylaxis of industrial affections and other reforms, aged 80 As a senator it was said of him that he had many opponents but not a single enemy He introduced the treatment of aneurysm by electropuncture, although gynecology and obstetrics were his chosen field——T Langhans, until recently professor of pathologic anatomy at the University of Bern, aged 76 He was a pioneer in the discovery of the giant cell, in the histology of the placenta and of nephritis, and also in the study of endemic goiter——A Mendonça, chief of the bacteriologic institute connected with the medical school at S Paulo, Brazil, of the leprosarium and men's clinic, and founder of the *Revista Medica de S Paulo*——Sir Francis Henry Lovell, dean of the London School of Tropical Medicine, died in London, January 28 Sir Francis became M R C S, England in 1865, and two years later L S.A. He entered the colonial service as surgeon in Sierra Leone, West Africa, in 1873, in 1878 he was made chief medical officer and president of the General Board of Health and a member of the legislative council of Mauritius After fifteen years in this service he was transferred as surgeon-general, medical officer of health and member of the executive and legislative councils of Trinidad and Tobago, and served in these capacities until 1901, when he retired from the colonial service A year prior to his retirement he was made a baronet, and in 1893 was created C M G After his retirement he was connected with the London School of Tropical Medicine, Royal Albert Docks, and was dean of that institution until his death

WAR NOTES

Typhus in Poland—It is reported from Berlin via London, under date of February 3, that typhus fever has broken out in Poland and that there are now thirty cases daily in Warsaw The death rate has risen from nineteen to thirty per 1,000

Change of Post for Pancoast—Dr Charles S Pancoast, Camden, N J, who has been in charge of a 4,000-bed hospital at Munkacs, Hungary, has been accepted by the Bulgarian war department and placed in charge of the surgical department of a large war hospital in Sofia

The Quirinal a Red Cross Hospital—The Quirinal Palace in Rome has been transformed into a Red Cross hospital under the personal supervision of Queen Elena, who takes active charge of the institution The gun room of the late King Humbert is now a dispensary, and the conservatory an operating room

Lack of Physicians Raises Mortality—A complaint is being made that a large district in France is entirely without physicians due to the exigencies of war In the neighborhood of Lyons the sick of fourteen towns and villages are under the care of one old practitioner who retired fifteen years ago Formerly this district had five physicians, but all of them are now in the field In other districts the same condition obtains, and the result is said to be an alarming increase in mortality, especially among children

PARIS LETTER

Paris, Jan 13, 1916

The War

SPECIAL ADVANCEMENT OF QUALIFIED PHYSICIANS AND PHARMACISTS

The new minister of war, General Gallieni, believes that under present conditions it is indispensable to utilize especially well qualified physicians and pharmacists in the army as efficaciously as possible He has therefore decided to give a military grade corresponding to their scientific rank for the duration of the war, to pharmacists and physicians possessed of certain university or hospital positions Accordingly, a decree has just been signed by the president of the republic for the immediate promotion from the grade of *aide major de 2-e classe* (second lieutenant) to the grade of *major de 1-ere classe* (commandant) or *major de 2-e classe* (captain), according to the length of their experience, of physicians and pharmacists possessed of the following qualifications professorship or agrege professorship in the medical or pharmaceutical schools or membership in a hospital staff in cities where medical schools are situated

The *Journal des Débats* remarks that this decree meets perfectly the needs of the situation, it is a conspicuous and deplorable anomaly which puts scientific men of high reputation under the orders of less qualified practitioners who, because they possess a higher military rank, wield responsibilities sometimes in excess of their abilities

PLACING OF SICK PRISONERS OF WAR IN SWISS HOSPITALS

According to Swiss journals, the negotiations for placing sick prisoners of war in Swiss hospitals (The Journal, Oct 2, 1915, p 1199) are making progress The problem was recently discussed at a meeting of heads of sanatoriums and pensions It is probable that the first trial will be made with about one thousand French prisoners and about as many German prisoners The former will be placed in hospitals at Leysin and the latter at Davos Of course, this measure will be applied only in cases of patients whose condition is not serious since, as I mentioned in previous letters, prisoners who are seriously affected will be exchanged by the respective belligerent countries

THE VALUE OF ANTISEPTICS IN THE TREATMENT OF WOUNDS

At a recent session of the Academie des sciences, Dr Pierre Delbet reported a new series of experiments on the action of antiseptics on pus Pus immersed in twice its volume of antiseptic solution for seven hours is seldom sterilized In 2 per cent phenol solution the pus was sterilized in six cases out of fifteen, in ether, in two cases out of eight, in corrosive sublimate, in two cases out of nine, in hydrogen peroxid, in one case out of six, in Dakin's solution, in two cases out of twelve, in Labarraque's solution sterilization was not obtained once in thirteen trials A hematic pus diluted with twice its volume of Dakin's solution gave cultures of staphylococci and streptococci after thirteen days Examinations of the preparations made with the pus employed in these experiments showed that while some of the microbes had been destroyed others had multiplied extraordinarily Delbet believes that this is due to the chemical transformations of the pus and the formation, under the influence of hypochlorites, of intermediary substances favorable to the germs He illustrates this by the fact that, while eggs furnish a mediocre culture medium for the staphylococcus and a poor one for the streptococcus, on the addition of Dakin's solution, one third, one half or two thirds volume, the egg becomes a good culture medium for the staphylococcus and an excellent one for the streptococcus In attempting to kill germs with hypochlorites one runs the risk of preparing a culture medium for them The production of such intermediary substances (culture mediums), together with the suppression of phagocytosis by the destruction of cells, accounts for the fact that in certain cases antiseptic dressings interfere with the healing of wounds, increase the number of germs and are altogether more harmful than useful

HOME MECHANICAL TREATMENT FOR ARTICULAR STIFFNESS

The frequency of articular stiffness after wounds of war is well known The treatment is not always easy, for institutions where mechanical treatment can be applied are not numerous and cannot be multiplied rapidly The following very simple device invented by Dr Privat, which gives excellent results, is therefore worthy of mention Continuous traction is exerted on the limb to be mobilized perpendicularly to its axis by means of a weight hung from a cord passing over a pulley which is not fixed but hung by a cord from the ceiling When the weight swings it produces gentle and rhythmic traction passing from maximum to minimum and vice versa By pulling a cord attached to the weight and letting it slip again, the patient controls the oscillations The operations of the device may be graduated by employing pulleys of various diameters for the same motor weight (5 kilograms, for instance)

THE FRENCH MEDICAL MISSION IN SERBIA

The *Journal Officiel* publishes the award of the epidemic gold medal to Dr Jaubert, head of the French medical mission in Serbia Dr Jaubert also has been mentioned for conspicuous gallantry in the following terms "Head of the French medical mission sent into Serbia, he displayed the finest abnegation and the greatest courage, giving to all the example of devotion to duty and, by the conscientiousness with which he performed his task, reflecting the greatest honor on France"

A Pharmaceutical Fraud

Aspirin, which ordinarily is supplied to France from abroad by way of Marseilles, is at present worth 200 francs a kilo (nearly $16 a pound) Some pharmacists and druggists of Paris have been supplied recently with a worthless substitute powder containing no acetylsalicylic acid The service for the repression of frauds in the police department is now endeavoring to ascertain if the fraud was committed abroad or if the substitution was made in Marseilles Meanwhile a circular is being sent to all French pharmacists and druggists warning against the fraud

Digestive Power of Oysters

M Henri Coupin has presented before the Academie des sciences a notation showing that the digestive power attributed to oysters belongs, not to the oysters themselves, but to the bacteria ingested with the water that bathes them Coupin found great chemical activity on the part of most marine bacteria Out of forty-three species only four were inert Twenty-eight produced fermentation in glucose, twenty-one in maltose, eleven in starch and ten in glycogen

Death of Prof Rodolphe Engel

Dr Rodolphe Engel, former professor of chemistry at the Faculté de médecine de Montpellier, has just died at the age of 66 He was the author of many scientific works and of a manual, "New Elements of Medical and Biologic Chemistry with Applications to Hygiene, Legal Medicine and Pharmacy"

BERLIN LETTER

Berlin, Dec 27, 1915

The War

MORTALITY OF THE WOUNDED

The number of wounded who have been returned to duty has increased steadily from month to month, and the mortality among them has been correspondingly diminished In August, 1914, of 100 wounded, 84 8 per cent returned to duty, 3 0 died, and 12 2 were permanently invalided In September, 1914, 88 1 per cent were returned to duty, and only 2.7 per cent died In October, 1914, 88 9 per cent were returned to duty, and the mortality was 2 4 per cent From November to March the percentages of those returned to duty varied between 87 3 and 88 9 The death rate in November was 2 1 In December 1914, the death rate was only 1 7 per cent In January, 1915 it was 1 4 per cent., and in February, 1 3 per cent During April and May the mortality rate rose to 1 4 per cent, but gradually fell to 1.2 per cent during June and July In April, 91.2 per cent were returned to duty, in June, 91 7 per cent, in May and July, 91 8 per cent Only 7 per cent were permanently invalided or given furloughs Of the latter, a considerable number subsequently returned to duty, thus increasing the percentage of that class The total averages show that per hundred men, 98 8 per cent were returned to duty or were only partially unfit, whereas only 1.2 per cent died The averages for the entire year were 89 5 returned to duty, 8 8 unfit or on furlough, mortality, 1.7 per cent

CARE OF WOUNDED

The Swiss government has proposed that 1,000 sick German and French prisoners of war be sent to Switzerland, January 15, for medical care The German government has accepted the proposal, with the proviso that the French government will cooperate in delivering an equal number of prisoners at the same time

According to the *Sydsvenska Dagbladet*, the large transports of Russo-German war invalids have been discontinued for the year Up to the present, 4 603 German and Austrian and 7,730 Russian invalids have been convoyed

At the request of the Berlin Aerztekammer-Komission (medical commission), the head of the police department has ordered the removal from public comfort stations of all advertising matter relating to the treatment of venereal diseases This is one step in the fight against quackery that is being made by the Berlin Medical Society

THE GERMAN STUDENTS DURING THE WAR

During the semester preceding the opening of the war, 79 077 students (of whom 4,500 were women and about 9,000 foreigners) attended the fifty-two universities and other higher institutions of the German Empire Of this number 60,943 (4,117 women, 4,100 foreigners) were enrolled in the twenty-one universities, 12,232 (82 women, 2,500 foreigners) were enrolled in the eleven technical schools The six schools of commerce (Berlin, Cologne, Frankfort, Leipzig, Mannheim and Munich) had 2,625 students, and the four veterinary colleges (Berlin, Dresden, Hanover and Munich) had 1,404 students The three agricultural colleges had 938 students Three schools of mining had 668 students, and 267 students were registered in the four schools of forestry During the first semester following the beginning of the war, the total number of matriculants fell to 64,700 in forty-seven of these institutions The four schools of forestry were closed, and the veterinary school in Munich became a part of the university Of this number 52,400 were registered in the universities, 9,900 in the technical schools, 350 in the veterinary and agricultural schools, 400 in the mining schools and 1,200 in the schools of commerce The number of foreign students fell to 4,000, and only 4,500 women students were in attendance These figures may not be correct, inasmuch as reliable data are available only from the universities and technical schools During the winter of 1914-15, about 50,000 of these students were in the field or available for service, that is, 75 75 per cent. of the 66,000 German male students registered at the beginning of the war It can be assumed that the remaining 25 per cent of students stood in some relationship to the military system, excluding probably only the agriculturists and the commerce students, of whom a very small number are now engaged in practical work. Of the 66,000 German male students who were registered at the end of the summer of 1915, only 12,000 are still in attendance at the schools, so that about 54,000, or 81.81 per cent, of German higher students are now enrolled in the army It is interesting, by way of contrast, that of the 13,785 university students registered during the summer semester of 1870 only 4,400 (32 per cent) were at the front, and 3,200 of this number fell in the field

Personal

Dr Alzheimer, professor of psychiatry in the Breslau university, died, December 19, aged 52 years In 1888 he was appointed assistant at the Frankfort psychopathic institute, and became chief in 1895 In 1902 he became assistant to Kräpelin in Heidelberg, and when the latter was called to Munich to take the directorship of the anatomic research department of the new clinic, Alzheimer went with him In 1913 he was called to Breslau, but soon after arriving there he became seriously ill, never recovering completely, and finally succumbing to the illness He was an indefatigable worker in psychiatric research He made many original observations and studies of the pathologic lesions of psychiatric diseases His differentiations were so accurate, especially in paralyses of various kinds, that the pathology of these conditions is now well known and easily distinguished from other similar disease processes He collaborated extensively with Professor Nissl of Heidelberg in histologic research, laying bare the finest anatomic variations in structure of paralysis, epilepsy, idiocy, arteriosclerosis, senescence and cerebral syphilis This research led him to announce that it was the function of the glia tissue to dispose of the tissue waste He also studied extensively and gave a most thorough and exhaustive description of a hitherto unknown mental disease of occasional occurrence in old age, since known as Alzheimer's disease In 1910, Alzheimer and Lewandowsky established the *Zeitschrift fur die gesamte Neurologie und Psychiatrie*, contributing the initial article on the diagnostic difficulties in psychiatry, in which he also detailed his clinical experiences

Decrease in Mortality in Berlin, and Diminishing Birth Rate in the German Empire During the War

Although the war has exerted a tremendous influence on population statistics because of the fewer marriages and births, Berlin reports show a considerable lowering of the death rate in general and of children in particular These data are set forth in detail in the monthly report of the statistics division of Berlin for September 1915 The general death rate during September, 1915, was 12 84, as against 14.36 for the same month in 1914 These figures must be a source of congratulation when one bears in mind that the stronger and healthier portion of the male population is at the front, leaving the weaker members at home Children's mortality has been diminished one half In September, 1915, 262 children under 1 year of age died in Berlin, as against 644 in September, 1914, that is, 13 48 per cent as against 27 51 per cent of the total death rate of the city for that month The principal causes of death among these children (exclusive of general weakness) were intestinal catarrh and diarrhea Only fifty-three children under 1 year of age died from intestinal catarrh during September, 1915, as against 217 in September, 1914, the proportion for diarrhea was 17 112 These figures are an indication of the effective campaign against children's mortality which has not diminished during the war, on the contrary, it has been conducted more effectively The birth rate has not diminished so very much, in September, 1915, 2,303 living children were born in Berlin, as against 2,996 in September, 1914 For the year the birth rate per thousand was 15.21 per cent, as against 18 37 per cent The birth rate has not fallen off so much during the war as is generally believed to be the case On the basis of 100 born during the months of April, May, June and July, 1914, the birth rate for the same period of 1915 was as follows Cologne, 94.2, Kiel, 87.9, Schoneberg, 85 5, Leipzig, 84 1, Dortmund, 83 8, Munich, 81.2, Berlin, 80.2, Hamburg, 76.2, Frankfort-on-the-Main, 73 5, New Cologne, 72 2, Nuremberg, 68.8, Essen, 120.2 As stated previously, the figures for Essen are deceptive because of the increase in population The falling off of the birth rate as a whole, then, is not over 20 per cent.

Care of the War Cripples

What might be called a lost limb bureau *(Gliederersatzprüfstelle)* has been established in Charlottenburg for the purpose of supplying lost body members and determining the line of work for which the individual may be fitted when artificial arms and legs have been supplied him Soldiers coming from the various hospitals will be sent to this bureau, and it is expected that in the course of time a school will be established or founded or developed in which these individuals will be taught how to carry on different lines of work. This bureau will publish reports showing the progress that has been made in the development of these men, and how artificial limbs may be improved in manufacture to permit of greater use The various manufacturing industries throughout Germany will receive these publications These men will be trained as metal workers, wood workers, transport laborers, to work with the hoe, the broom, the cart, textile workers and agriculturists

Insurance Companies War on Venereal Diseases

The presidents of the various German insurance companies met, January 14, in the imperial insurance bureau with representatives of the health department and the Prussian army edical corps, for the purpose of considering further mea- es in the fight against venereal diseases The military iorities commended the measures proposed by the insur- e companies by which the patient receives thorough treat- ent without any publicity, and urged that when such patients are dismissed from the military service they be given this treatment This action also received the approval of the army and navy authorities, the German medical profession, and the sick benefit and workmen's associations Insurance companies intend to establish consultation and treatment bureaus at which all discharged soldiers may apply, and these measures will later be extended and made available to all workmen who are members of the workmen's insurance societies It was the sense of this meeting that these measures should receive hearty support As a result of all this activity, a motion was passed forbidding the increase in quackery during the war

LONDON LETTER

London, Jan 20, 1916

The War

THE MEDICAL EXAMINATION OF RECRUITS

The examination of the large numbers of recruits which have flocked to join the new armies has presented considerable difficulty Many physicians have had to abandon temporarily their private work and examine men from morning till late at night. In numerous cases the work was necessarily done perfunctorily, men being examined at the rate of one every two minutes Like everything else in connection with our new military organization, improved methods are gradually being introduced Sir Alfred Keogh, director general of the Army Medical Service Corps, has now arranged that special stations for the examination of recruits are to be set up, each of which shall be under the control of a body of men specially chosen and approved This council will select the examining physicians and will be guided in its work by special considerations Physicians will be chosen because they have special qualifications for examining men for the army An officer of the Royal Army Medical Corps will be attached to each station The question of the number of recruits to be examined at each station per day has been seriously considered, and it has been laid down that not more than 200 men shall be examined at any one station in any one day This, with the staff of physicians at hand, will make it absolutely certain that each recruit will have full justice done to him Each recruit will be carefully examined in a quiet room and under the most favorable conditions, and each man will be summed up by the physician examining him and classified according to his capacity Thus one man will be certified fit for general service, another as fit for less active work, and so on These classifications will be handed on to the military authorities, and dealt with by them according to military requirements No man will be sent to work for which he is unfit, nor will any man be put to drilling which his constitution or present state of strength does not sanction "Doubtfuls," that is, men whose state of health may be such as to call for an expert opinion, will be sent to specialists

TRAINING BELGIAN PHARMACISTS IN ENGLISH METHODS

The Pharmaceutical Society of Great Britain arranged a class for training the Belgian pharmacists in this country in English methods of dispensing, and in the reading and translation of English prescriptions The class, which was entirely gratuitous, was held during the Christmas holidays Prof H J Greenish taught practical dispensing, and Mr H. S Phillips the reading of prescriptions

Sir William Osler on the Education of Boys Intended for the Medical Profession

A conference of educational associations has been held at the University of London at which Sir William Osler pleaded that boys intended for the medical profession should leave the hands of the schoolmaster fit to begin their special studies He urged that earlier and more extensive work in science would save time at the universities He thought that by the time a boy was 16 he had in most cases selected his career, and that when he intended to enter the medical profession, the sixteenth and seventeenth years should be devoted to the preliminary sciences—physics, chemistry and biology At 18 the boy would be fit to go to the university and to proceed at once with physiologic chemistry, physiology and anatomy He contended, therefore, that a continuous science course should be organized for two years The teaching of chemistry at the schools was not yet good enough If it were improved and the other preliminary sciences well taught, he believed that by shortening the vacation and rearranging the methods of instruction it would be possible to return to a four year curriculum for medical students The average man would then qualify at 22, spend a year in hospital or in graduate study and start life at 23 Sir William considered that under our present system, valuable time was being lost because science was a Cinderella in the kitchen instead of a dominant partner in the educational family His views as to the shortening of the curriculum are not in agreement with the report made by the Education Committee of the General Medical Council made nine years ago An investigation showed that the mean length of the curriculum was about seven years—in England seven and one-half, and in Scotland and Ireland a little over six and one-half years The possible minimum time is five years, and teachers complain that this is not sufficient for all the subjects which a student ought to learn

Government Medical Work in India

The extent of the government medical work in India is shown by the recently issued report of the surgeon-general At the regular dispensaries of Bengal (which is only one of three provinces of India) 5,571,000 patients were treated—an increase of 380,000 over the previous year In addition, 130,000 were treated at certain mission and temporary epidemic dispensaries, and at fairs visited by medical officers It is evident that the people appreciate more and more the benefits to be derived from these institutions In the hospitals there are great difficulties as to nursing, but the training of Indian women as nurses has been started at some centers of Bengal

New Medical College at Bombay

Owing to the munificent donation of Mr Gordhandass Sunderdass, a want long felt in Bombay—a second medical college—will be established in connection with the King Edward Hospital and affiliated to the Bombay University A condition of the donation is that the professors and teachers shall all be qualified Indian gentlemen not in government employ

Deaths from Wild Animals in India

The government report shows that during the past year, 1,745 persons were killed by wild animals, an increase of about 9 per cent over the previous year Tigers were responsible for 646 In one district a man-eater killed 289 persons The number of lives lost by snake-bite amounted to 22,894, an increase of 1,124 over the previous year's figures The number of cattle killed by wild animals was 94,746 The number of snakes destroyed was 118,816

Marriages

Marinda E Blackburn, M D, Columbus, Ohio, to Mr P M Weddell of San Jose, Calif, at Los Angeles, December 27

Edward August Hoefer, M D, Grafton, Iowa, to Miss Goldie Cleveland White of Greenville, Miss, January 16

Evarts Ambrose Graham, M D, Mason City, Iowa, to Miss Helen Tredway of Dubuque, Iowa, January 29

Earl Fuller Shaw, M D, Williamston, Mich, to Mrs Lyda E Grant of Lansing, Mich, January 27

Joseph A S Regli, M D, San Jose, Calif, to Miss Anna Rebecca Kelly of Oakland, Calif, January 19

Marion Helena Ober, M D, Eugene, Ore, to Mr George M Locke of Portland, Ore, January 22

James Brooks Vaughan, M D, to Miss Eula Belle Simpson of Williamsburg, Mo, January 27

Thomas Benton Sellers, M D, to Miss Kate Terry, both of New Orleans, December 23

Deaths

Richard Channing Moore, M D Northwestern University Medical School, Chicago, 1865, aged 74, a Fellow of the American Medical Association, and second vice president in 1890-91, president of the Nebraska State Medical Society in 1887, of the Omaha Medical Society in 1898, and of the Medical Society of the Missouri Valley in 1901, acting assistant surgeon, U S Army, in 1864 with Civil War service, city physician of Omaha in 1876, one of the founders of the first medical college in the city which developed into the University of Nebraska College of Medicine and professor of diseases of the mind in that institution, was given a loving cup in January, 1910, by the Omaha-Douglas County Medical Society, of which he was a charter member, died at his home in Omaha, January 27

James Burgess Book, M D Jefferson Medical College, 1865, aged 72, a Fellow of the American Medical Association, for many years professor of surgery in the Detroit College of Medicine and Surgery, prominent as a surgeon and business man of Detroit, formerly a member of the staff of St. Luke's and Harper hospitals, surgeon of the Independent Military Battalion, Detroit, in 1881 and later a member of the medical staff of the Fourth Infantry, Mich N G , for one term a member of the city council and for the last twenty-five years a director in prominent financial institutions of the city, died at his home in Detroit, January 31, from septic pneumonia

John M Kitchen, M D New York University, New York City, 1846, aged 89, an honorary member of the Indiana State Medical Association, surgeon in charge of the U S Army Hospital, Indianapolis, from 1861 to 1865, consulting physician to the State Institution for the Deaf from 1872 to 1877, physician to the State Institution for the Blind, consulting physician to the Indianapolis City Hospital, one of the founders of the Indianapolis Medical Society and formerly president of the Marion County Medical Society and president of the board of trustees of the Medical College of Indiana, one of the oldest practitioners of Indianapolis and for many years prominently identified with medical activities in that city, died in his apartment in Indianapolis, February 5

Jesse B Burditt, M D Tulane University, New Orleans, 1894, aged 44, a member of the State Medical Association of Texas and a specialist on diseases of the eye, ear, nose and throat, a member of the medical staff of the Baptist Sanitarium and of the Southern Pacific Hospital, Houston, Texas, for the last six years a practitioner of Houston, was found dead in the bathroom in his apartment in that city, January 24, from heart disease

Roscoe G Dixon, M D Memphis Hospital Medical College, Memphis, Tenn., 1910, aged 31, formerly a Fellow of the American Medical Association, a member of the Oklahoma State Medical Association, of Sugden, Okla , while crossing the Rock Island tracks in his automobile, January 23, was struck by a train and sustained injuries from which he died a few hours later Mrs Dixon, who was with him, was killed instantly

Eugene Miller Smyser, M D University of Pennsylvania, Philadelphia, 1864, aged 73, a practitioner and druggist of Kings Park, N Y , assistant surgeon of the Thirty-Fourth Pennsylvania Militia during an existing emergency from June 3 to Aug 24, 1863, and assistant surgeon of the Forty-Eighth Pennsylvania Volunteer Infantry from April, 1864, until the close of the Civil War, died at his home in Brooklyn, January 27

Samuel M Miller, M D Kentucky School of Medicine, Louisville, 1876, aged 64, a Fellow of the American Medical Association, professor of gynecology in the Medical Department of Lincoln Memorial University, Knoxville, Tenn , formerly president of the East Tennessee and Knox County medical societies and a member of the Southern Association of Railway Surgeons, died at his home in Knoxville, January 28

Edward McCord Scott, M D Vanderbilt University, Nashville, Tenn , 1900, aged 39, a Fellow of the American Medical Association and formerly secretary of the Ashley County (Ark) Medical Society, a prominent practitioner of Hamburg Ark , who was operated on at St Luke's Hospital, Little Rock, Ark , a week before for appendicitis, died in that institution, January 21, from embolism

George Howard Malcolm Rowe, M D Harvard Medical School, 1868, aged 74, a Fellow of the American Medical Association, a member of the American Public Health Association and president of the American Association of Hospital Superintendents, who resigned as superintendent of the Boston City Hospital in 1908 after thirty years' service, died at his home in Boston, January 30

Edward Smith Eveleth, M D College of Physicians and Surgeons in the City of New York, 1866, aged 74, a member of the Massachusetts Medical Society and a member of the staff of the Addison Gilbert Hospital, Gloucester, Mass , one of the oldest practitioners of Gloucester, for many years a member of the local school board, died at his home in East Gloucester, January 25

Conrad S Reynolds, M D University of Pennsylvania, Philadelphia, 1883, aged 57, a Fellow of the American Medical Association and for thirty years a practitioner of Kennett Square, for many years a member of the Borough Board of Health and Borough Hospital, died in the German Hospital, Philadelphia, January 21, a day after an operation for appendicitis

Thomas P Singletary, M D Louisville (Ky) Medical College, 1887, aged 55, a member of the Louisiana State Medical Association, coroner of East Baton Rouge County for four terms, local surgeon at Baton Rouge for the railways centering in that city and founder of the Baton Rouge Sanitarium, died at his home in Baton Rouge, January 23

Robert Manton Wilson, M D Missouri Medical College, St Louis, 1879, Jefferson School of Medicine, Louisville, 1882, aged 59, local surgeon at Hope, Ark , for the St Louis, Iron Mountain and Southern, and Arkansas and Louisiana railways, a member of the International Association of Railway Surgeons, died at his home in Hope, January 26

Asa Jacob Weaver, M D Northwestern Medical College, St Joseph, Mo , 1893, aged 47, a Fellow of the American Medical Association, coroner of Cloud County, Kan , a well-known surgeon of Concordia and proprietor of the Weaver Hospital in that city, died at his home in Concordia, January 27, from cerebral hemorrhage

Frederick Lawford, M D University of Maryland, Baltimore, 1900, aged 40, a member of the Medical Society of Virginia, surgeon to the Norfolk and Southern Railway and Berkley Street Railway, proprietor of the Lawford Hotel and Hospital, Berkley, Norfolk, Va , died at his home in Norfolk, January 24, from pneumonia

John Mullin Batten, M D University of Pennsylvania, Philadelphia, 1864, aged 78, a Fellow of the American Medical Association, surgeon in the United States Navy from 1864 to 1866 with Civil War service, for many years a practitioner of Pittsburgh, died at his home in Downington, Pa , January 23

Joseph Levan Van Bender, M D Eclectic Medical College of the City of New York, 1882, aged 75, formerly a member of the Medical Society of the State of New York, a veteran of the Civil War, for more than forty years a practitioner of Penn Yan, N Y , died at his home in that city, January 21

William Francis Jones, M D University of Pennsylvania, Philadelphia, 1874, aged 71, a member of the Medical Society of Virginia, a Confederate veteran, for more than a quarter of a century a practitioner of Gloucester County, Va , died at his home in Gloucester, Va , January 24

Lois Fitch Mansfield, M D Northwestern University Women's Medical School, Chicago, 1876, aged 86, for thirty years a practitioner of Santa Barbara, Calif , who is said to have conducted the first open-air school in America, died at her home in Santa Barbara, about January 29

Robert H McKee, M D Medical College of Ohio, Cincinnati, 1870, aged 71, formerly a member of the Ohio State Medical Association, health officer of Bainbridge, Ohio, a veteran of the Civil War, died at his home in Bainbridge, January 24, from cerebral hemorrhage.

Henry J Sharp, M D Starling Medical College, Columbus, Ohio, 1871, aged 69, formerly a member of the Ohio State Medical Association, a veteran of the Civil War, for forty-five years a resident of London, Ohio, died at his home in that place, January 19

Daniel A. Bissell, M D Hahnemann Medical College, Chicago, 1883, aged 62, health officer of Afton, N Y , from 1886 to 1889 and for many years a practitioner of Gloversville, died at the home of his daughter in Yonkers, N Y , January 29, from heart disease

Thomas Benton Swartz, M D Northwestern University Medical School, 1888, aged 60, a Fellow of the American Medical Association, was stricken with cerebral hemorrhage, January 28, while making a professional call, and died at his home in Chicago, February 1

James S Edwards, M D McGill University, Montreal, 1880, aged 59, a Fellow of the American Medical Association, and one of the most esteemed general practitioners of Grand Rapids, Mich , died at his home in that city, January 23, from pneumonia

Carl Ultes, M D University of Michigan, Ann Arbor, 1875, Bellevue Hospital Medical College, 1878, aged 67, a member of the Ohio State Medical Association and for many years a practitioner of Springfield, Ohio, died in Eustis, Fla , January 28

James B Duncan, M D Kentucky School of Medicine, Louisville, 1879, aged 59, a Fellow of the American Medical Association and a well-known practitioner of Southern Indiana, died at his home in Bedford, Ind , January 31, from pneumonia

John W Cates, M D University of Nashville, Tenn , 1856, aged 84, a surgeon in the Confederate service throughout the Civil War and since its close a practitioner of Maryville, Tenn , died at his home in that place, January 21, from heart disease

Peter Jerome Curren, M D Long Island College Hospital, Brooklyn, 1882, aged 62, for several years in charge of the Antirabic Clinic of the Brooklyn Department of Health, died at his home in Brooklyn, January 29, from heart disease

William G Bradshaw, M D *College of Physicians and* Surgeons, Baltimore, 1881, aged 60, postmaster of High Point, N C , a druggist, banker and furniture manufacturer, died at his home, January 19, from cerebral hemorrhage

Morris Kitay, M D University and Bellevue Hospital Medical College, New York City, 1915, aged 27, house physician in the North Hudson Hospital, Weehawken, N J , died in that institution, January 25, from pneumonia

Edward A Mayberry, M D University Medical College, Kansas City, Mo , 1897, aged 47, a Fellow of the American Medical Association, of Enid, Okla , died recently in Hot Springs, Ark , from disease of the stomach

William Raiford Eve, M D Medical College of Georgia, Augusta, 1867, aged 69, a Fellow of the American Medical Association, of Beech Island, S C , died in a hospital in Savannah, Ga , January 21, from heart disease

Franklin Harvey Haney, M D Chicago College of Medicine and Surgery, 1909, aged 38, for thirteen years a pharmacist and practitioner of Illinois, died at his home in Walnut, Ill , January 11, from endocarditis

George William Coit, M D Bellevue Hospital Medical College, 1866, aged 78, of Missouri Valley, Iowa, formerly president of the Iowa Railway Surgeons Association, died in La Jolla, Calif , January 31

Balthazar Johannes deVogel, M D University of Amsterdam, Holland, 1868, aged 69, for more than forty years a practitioner of Hospers, Iowa, died at his home in that place, January 27, from pneumonia

James C Chaney, M D Memphis Hospital Medical College, Memphis, Tenn , 1895, aged 64, formerly president of the Owasso (Okla) Board of Health, died at his home in Milo, Okla , January 20

William J Williams, M D Missouri Medical College, St Louis, 1878, aged 66, for nearly twenty years a practitioner of Springfield, Mo , died at his home near that city, January 24, from heart disease

Major S Langs, M D University of Toronto, Ont., 1865 aged 81, for forty-seven years a practitioner of Suspension Bridge, Niagara Falls, N Y , and village trustee, died at his home, January 20

George Isaac Cason, M D University of Missouri, Columbia, 1877, aged 62, for several years physician of Colusa County, Calif , died at his home in Colusa, January 18, from cerebral hemorrhage

Reuben Waddell Graham, M D College of Physicians and Surgeons, Chicago, 1915, aged 23, an intern in the *Illinois* Steel Company's Hospital, South Chicago, Ill , died January 31, from diphtheria

William Alonzo Ellis, M D College of Physicians and Surgeons Boston 1907, aged 30 died at his home in Essex, Mass , January 25, from pneumonia

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

OXYBON DECLARED FRAUDULENT

The United States Denies the Use of the Mail to the Exploiters of the Oxybon

Another, although probably not the last of the gas-pipe frauds has met its Waterloo On Jan 15, 1916, a fraud order was issued by the postmaster-general against the Oxybon Company and Ben A Hallgren of Chicago, because it is alleged they had been engaged in conducting a scheme for obtaining money through the mails "by means of false and fraudulent pretenses, representations and promises"

The Oxybon has been referred to in The Journal's articles on the gas-pipe frauds, which include such well-known humbugs as the Oxydonor, the Oxypathor and the Oxygenor[1] The Oxybon Company, according to the complete set of advertising matter in The Journal's files, had for its "president and general manager" one Dr G W Filloon and for its "secretary and sales manager," Ben A Hallgren

The Oxybon, which as a fake did not even have the saving grace of originality, being merely a copy of other devices of the same type, was alleged to be the invention of Dr Filloon So far as our records show, Filloon is not a physician In the medical directories issued during the past thirty years the name of Filloon does not appear except that the issues of 1902 and 1904 contain the name of George W Filloon, *546 Good Block, Des Moines, Iowa According to the same* directories, the school of graduation of George W Filloon was the "Metropolitan Medical College" for the year 1899 The Metropolitan Medical College, it will be remembered, was a fraudulent Chicago concern that sold diplomas to anybody that would pay the price The "Metropolitan" was the successor to the even more notorious "Independent Medical College" of Chicago whose charter was revoked by the Supreme Court of Illinois in 1899 The moving spirit of both the Metropolitan and the Independent Diploma Mills was one J Armstrong The federal authorities issued a fraud-order against the Metropolitan Medical College in 1900 Armstrong, according to our records, was fined $500 and sent to jail for eighteen months

According to the memorandum prepared by the solicitor for the Postoffice Department for the postmaster-general recommending the issuance of a fraud order, the Oxybon Company and Ben A Hallgren were called on to show cause, on or before Nov 16, 1915, why a fraud order should not be issued against them At that time the Chicago postmaster reported that the average amount of mail received by the Oxybon Company was 140 pieces daily On Nov 17, 1915, the concern appeared before the solicitor's office, through John F Voigt, a Chicago attorney, at which time the government's case was presented At the close of the hearing the Oxybon people were allowed three weeks in which to file the brief and certain evidence in their defense, the mail addressed to the company being impounded in the meantime, pending the conclusion of the case The evidence submitted by the government and the defense filed by the Oxybon concern were carefully considered and the solicitor in his memorandum to the postmaster-general reported, in part, that he found the facts to be essentially as follows

"Ben A Hallgren, under the name The Oxybon Company, at 208 North Fifth Avenue, Chicago, Ill, is engaged in the business of selling a certain device known as an 'Oxybon,' which consists of a metal cylinder filled with a certain compound, to each end of which is attached an insulated wire which terminates in garterlike attachments The device is to be attached to a person suffering from disease, the cylinder at the same time being immersed in cold water or ice, and the respondents are selling the instrument as a panacea for the cure of practically all human ailments

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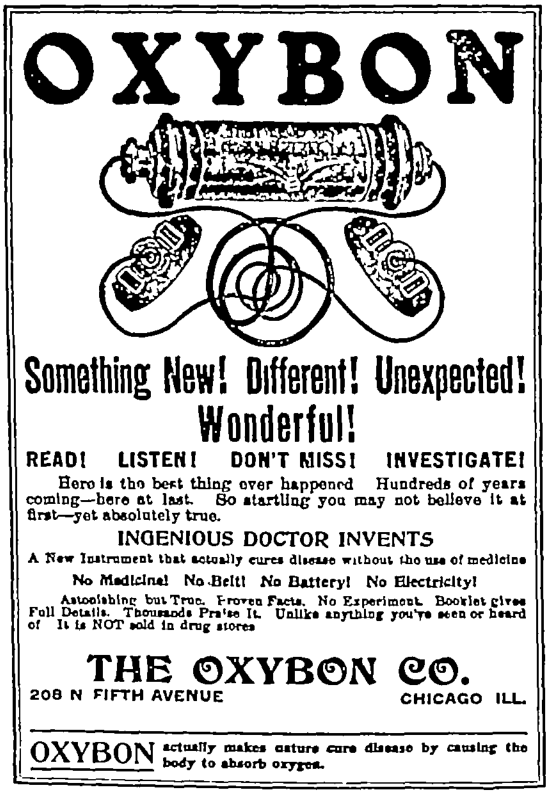
[1] A description of these various gas pipe frauds is published in the Association's pamphlet "Medical Mail Order Frauds," price 10 cents.

As a preliminary step to secure patients, the respondents insert in magazines and periodicals an advertisement which reads in part as follows

> 'Borrow an Oxybon
>
> You may now test this wonderful curative invention in your own home
>
> "Great thirty day offer
>
> Have you failed to find relief? Then all we ask is that you give us an opportunity to demonstrate the worth of our treatment by trying it for 30 days
>
> Oxybon is a scientific instrument that floods the body with vital life-giving oxygen It relieves in an astonishingly short time all manner of acute and chronic troubles
>
> It may be the turning point in your life from sickness to health
>
> 'Send for our two valuable free booklets and particulars of our great offer to-day "

"When a reader answers the advertisement he is sent certain circular matter by the respondents which contains representations to the effect that the Oxybon, when attached to the diseased human body in accordance with certain directions to be furnished by the respondents, will cause the body to absorb increased amounts of oxygen through the skin and pores, that the said device is a scientific instrument which floods the body with oxygen, that the said device raises the resisting power of the human body against disease, that the said device makes everyone supreme master of his own health, that the operation of the said device is in accordance with the law of diamagnetism, that the curative powers of the said device far exceed those of any known method or appliance available to the medical profession, and that through the means indicated the said device will cure practically every human ailment"


OXYBON

Something New! Different! Unexpected! Wonderful!

READ! LISTEN! DON'T MISS! INVESTIGATE!

Here is the best thing ever happened Hundreds of years coming—here at last. So startling you may not believe it at first—yet absolutely true.

INGENIOUS DOCTOR INVENTS

A New Instrument that actually cures disease without the use of medicine

No Medicine! No Belt! No Battery! No Electricity!

Astonishing but True. Proven Facts. No Experiment. Booklet gives Full Details. Thousands Praise It. Unlike anything you've seen or heard of It is NOT sold in drug stores

THE OXYBON CO.
208 N FIFTH AVENUE CHICAGO ILL.

OXYBON actually makes nature cure disease by causing the body to absorb oxygen.

A reduced reproduction of one of the Oxybon advertising circulars

The memorandum then quoted some of the preposterous claims made in the Oxybon "literature" They may be summed up by saying that the Oxybon was claimed to be a cure for practically every known disease — and some that are unknown to medical science The memorandum continues

'ABSOLUTELY INERT'

Government experts, who appeared before this office at the hearing and were subjected to cross-examination by the attorney for the respondents, agreed that the device is absolutely inert and has no power whatsoever either to cause the body to absorb increased amounts of oxygen, to generate any force or influence whatsoever when applied to the body, or to cure disease in any form

"The contents of the cylinder, which was given a quantitative chemical analysis by the Department of Agriculture, is as follows

Moisture that is volatile material at 100 C	6 63 per cent
Sulphur as free sulphur	47 92 per cent
Carbon and other material volatile at red heat	12 00 per cent.
Ash material non volatile at red heat	32 65 per cent.

'The contents of the ash consists of iron, aluminum and copper calcium magnesium potassium and sodium oxides phosphates and sulphates

"Electrical and magnetic tests made at the Bureau of Standards, Department of Commerce, under conditions prescribed in the direction book which accompanies each instrument, disclosed that although the most delicate galvanometers and other instruments were used, the instrument is both electrically and magnetically inert, and, furthermore, that even if any electrical or magnetic force were generated within the instrument, it is effectively short-circuited, so that it would be impossible for the force, if any were produced, to be transmitted to any other object Identical results were obtained irrespective as to whether or not the cylinder itself was immersed in cold or hot water

"PROOF" THAT FAILED TO PROVE

"Among the representations in the respondents' literature contained in a booklet entitled 'Oxygen is Life Power' is the following

> "Proof
>
> "Prove it on a plant Place the treating plate in the soil of a flower pot containing a plant, and the instrument in cold water and you will soon see the plant thrive in a surprising way in a few days Reverse it by putting the instrument in hot water, and the plant will wither and die Plants have no imagination and no faith' The Oxybon can no more fail to do good to the human system when rightly applied than sun shine and moisture can fail to grow vegetation, if applied at any reasonable stage

'Dr W W Stockberger, physiologist in charge of Drug Plants and Poisonous Plant Investigations, in the Bureau of Plant Industry, Department of Agriculture, who appeared at the hearing as a witness for the government, testified that the tests suggested above had been made under his direction and personal observation in one of the greenhouses at the Department of Agriculture"

Dr Stockberger described the test that had been made under his direction and observation on plants The Oxybon was used on a number of them according to the directions, immersing the instrument in cold water No increase in growth was shown in these experiments The experiment was also made by immersing the Oxybon in hot water but the plants did not "wither and die" as the exploiters of the Oxybon said they would The expert said that so far as he "could determine by careful inspection and observation the instrument had absolutely no effect whatsoever" The memorandum continues

'Dr Lyman F Kebler, Chief of the Drug Division, Bureau of Chemistry, Department of Agriculture, also appeared at the hearing as a witness for the government, and described certain tests made of the instrument in question on a person suffering from tuberculosis Although the instrument was applied in accordance with directions for a period of more than a month, no improvement in the patient's condition was noted, and the patient subsequently died"

"CURING" SPINAL CURVATURE, MENORRHAGIA AND HEART DISEASE!

A prominent practicing physician of Washington, D C, who appeared at the hearing as a witness on behalf of the government stated that, in his opinion, the Oxybon had no curative value whatever The memorandum further detailed the result of the investigation by Inspector Honvery, a post-office inspector who, by the way, has done excellent work in investigating various medical frauds on the public To quote

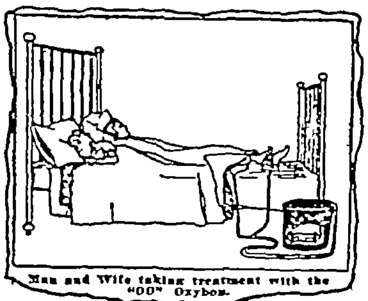
'Inspector Honvery, in the course of his investigation, wrote certain test letters to the respondents describing certain ailments from which the writer was alleged to be suffering One letter described the case of curvature of the spine in a girl 13 years of age, and in replies thereto attempts were made by the respondents to sell or rent an Oxybon for the cure of this deformity "

"Another test letter written by Inspector Honvery, under an assumed name, described a case of profuse and steadily protracted menstruation in a young girl 17 years of age The respondent's reply thereto, which was not a form letter, stated that Dr Filloon (the inventor of the Oxybon) had been personally consulted and 'believes that from the way you describe your daughter's case she should get very encouraging results from the use of an Oxybon, as he thinks that the trouble is principally one of weakness of the organ affected, and as soon as Nature can sufficiently strengthen the body through the use of an Oxybon she should again be restored to health,' and also that the Doctor thinks that it would be to your best interest to try an Oxybon on our very liberal trial offer! '"

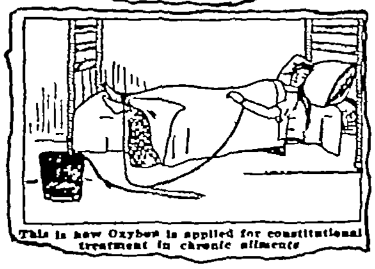
"Another test letter was addressed by Inspector Honvery to the respondents asking for information whether the Oxybon would be of benefit in treating valvular disease of the heart In the respondents' reply, dated Feb 2, 1915, it was stated

> "I have referred your case to the Doctor and he informs me to write to you that we cannot tell you anything as to the results on account of the seriousness of your trouble The only thing you can do is to try an Oxybon Your case has been of so long standing and its progress so far gone that it may be beyond the aid of nature, and if this is the case no treatment can be of any help to you
>
> "However, you can never tell what this wonderful instrument is going to do until it is applied "

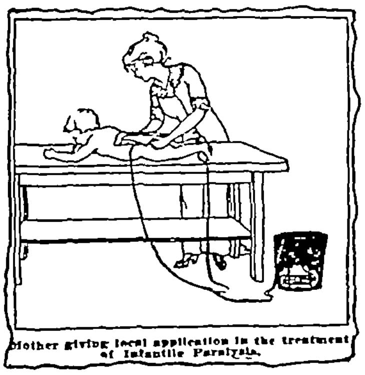
The government's medical expert testified that the Oxybon could have no effect in these various cases and further that the conditions described by Inspector Honvery were none of them caused by lack of oxygen, although the Oxybon literature declared that "disease is largely if not wholly due to a deficiency of oxygen in the blood and body" Quoting further from the memorandum



Man and Wife taking treatment with the "OO" Oxybon.



This is how Oxybon is applied for constitutional treatment in chronic ailments



Mother giving local application in the treatment of Infantile Paralysis.

Reproductions of some of the illustrations (reduced) from an advertising booklet sent out by the Oxybon concern

"The respondents in defense have made no genuine attempt to meet the case made out by the evidence presented on behalf of the government, and have relied upon certain documentary evidence including affidavits from the respondent Hallgren, and from physicians and others Hallgren affirms his own faith in the instrument as the result of alleged cures effected upon himself by its use and from statements made to him by Dr Filloon, the inventor of the instrument

"Other affidavits relate to tests of the Oxybon on plants and guinea pigs in Chicago Those who made the tests did not appear at the hearing and were not interrogated by counsel for the government, and whatever inference as to any power in the Oxybon to cure *disease might* be drawn from these tests standing alone, which appears to be doubtful to say the least, it is clearly refuted by the testimony in behalf of the government already referred to above

TESTIMONIALS—OF COURSE

"Copies of many alleged testimonials from those who claim to have used the Oxybon with beneficial effects are also submitted by the respondents, who say in their brief

> " It would seem just to at least attach as much importance to the opinion of a man who claimed to have been sick and to be cured of his sickness and of his opinion of the value of the appliance which affected the cure as to the opinion of *medical or other* experts of the value of the appliance inasmuch as their opinion [the opinion of experts] is based upon an hypothesis A *man* usually knows when he is sick and likewise he knows when he feels well These letters have more weight than the guesses of experts "

"Assuming that the originals of these testimonial letters were actually received by the respondents, and assuming further that the statements contained therein are frank and sincere, the beneficial results described are doubtless due in large measure to the mental effect caused by the use of a somewhat elaborate and mysterious-looking apparatus These testimonials may be easily described as falling into one of three classes, viz, they were written either by persons who imagined that they were suffering from disease, when in fact they were not, by persons whose recovery was due to nature, or by persons whose recovery was due to nature and local or hygienic treatment prescribed in connection with the alleged curative agent

THE WORTHLESSNESS OF TESTIMONIALS

"In this connection, it may be stated that testimonials in general are of *small evidentary* value in cases of this kind, and are often furnished in good faith by sufferers from chronic ailments who are prone to consider slight temporary or even permanent improvement, due to natural causes, as an evidence of curative value in the device or treatment for which they furnish testimonials At the hearing it was shown that a patient's diagnosis of his own disease is of very little value

"The defense in this case fails entirely to meet the government's charges, and is *one that might be urged with* equal force in defense of any fraudulent mail-order medical concern If, in fact, this device possessed any of the power claimed for it, the respondents would not have been driven for their defense to testimonials, but would have been able to produce some affirmative proof to meet the burden placed on them by the evidence of the government.

THE DANGER OF SUCH FRAUDS

"When it is remembered that the respondents are selling the Oxybon for the cure of practically all diseases, many of which if allowed to continue without immediate medical or surgical treatment may prove fatal to the patient, and that those who buy the device are lulled into a sense of *false* security from all disease, necessarily resulting in many cases in a serious or even fatal outcome, which might have been prevented had medical treatment been resorted to, the absolute necessity of prohibiting any further use of the mails wha ever in the sale of this device is apparent

THE RENTAL TRICK

"Respondents place considerable reliance upon the fact that the Oxybon is sold on trial and call attention to the fact that under a certain 'lease form' entered into with patients, the latter are entitled to a refund less the sum of $5, which is retained by the respondents as rental, in case the purchaser returns the instrument after thirty or before thirty-six days The names of 340 persons to whom such refunds have been made are also submitted by the respondents This arrangement *in no* way alters the fraudulent nature of the business of the company

"It is well known that many who find themselves defrauded neglect to make complaint, and in any event the fact that a part of the money secured by the false and fraudulent representations above is returned upon demand is a question of degree only In all cases the patient is at least defrauded of *the* $5 *which he* pays as 'rental'

"In this connection, attention is invited to the following language of the United States Circuit Court of Appeals for the Eighth Circuit in Harris v Rosenberger, reported in 145 Federal 449, in which counsel for a concern against which a fraud order had been issued, among *other grounds in* support of a bill to enjoin the execution of the order, urged that a promise to refund the purchase price if the goods in question were not satisfactory and were returned and the fulfilment of that promise in the instances where it was requested showed that there was no intention to defraud

"'The falsity of the representations and the appellee's knowledge of their falsity being established, as they were, it was not an inadmissible view that the promise to refund the purchase price, *if the goods* were *not* satisfactory and were returned, was cleverly devised to give apparent color and support to the representations True, it appeared that in a few exceptional instances where customers discovered and resented the deceit which was practiced upon them, the appellee refunded the purchase price in fulfilment of his promise, but it cannot be said that this necessarily or conclusively disproved any intent to defraud, particularly when it was not questioned that in all other instances he retained the money obtained by means of the deceit which he was practicing'"

As previously stated, the postmaster-general issued a fraud order against Ben A Hallgren and the Oxybon Company on Jan 15, 1916

Correspondence

The Kinetic Drive

To the Editor —It has occurred to me that since Professors Carlson and Woelfel have made themselves the sponsors of those who see reasons for questioning the validity of the kinetic theory (The Journal, Jan 22, 1916, p 295), it might be well to pursue with them an open debate in the pages of The Journal Certainly if the kinetic theory is false it should be proved so, and that proof should be presented as openly as arguments in favor of that theory have been presented My proposal would be that this debate be purely on the merits of the case, that it be free from personalities, that each present fully the data on which he founds his opinion regarding any contended point in the discussion, and that the discussion of each point be subject to the generally accepted rules of debate, i e., that the affirmative have the privilege of final rejoinder

Will you not let me know whether or not the pages of The Journal would be open to such a discussion, and if so will you find out whether or not Professors Carlson and Woelfel are ready thus to enter the forum?

G W Crile, M D, Cleveland

[The above correspondence was referred to Drs Carlson and Woelfel, who reply]

To the Editor —Our reply to such a proposal might well have been anticipated by Dr Crile It seems to us that Dr Crile before making such a proposal should publish the laboratory and clinical data purporting to substantiate the theory What sort of a 'debate" would that be in which most of the evidence is accessible to one side only? Let Dr Crile publish his "clinical cases"—especially since he is of the opinion that the validity of the theory must be proved or disproved in the clinics—and all his laboratory data relating to the theory, in such form that one can judge their cogency as evidence and let the essential and new facts be confirmed by others Such a discussion might be useful

A J Carlson, Ph D
Albert Woelfel, M D,
Chicago

The Signs and Symptoms of Impending Death

To the Editor —In Dr Reilly's article on this subject (The Journal, Jan 15, 1916, p 160) there are a number of statements at variance with established beliefs Dr Reilly states that the death rattle is associated with pulmonary edema The death rattle is caused by the air passing through the mucus which collects at the opening of the larynx through inability to remove it by swallowing

The statement is made that edema of the glottis is invariably fatal The glottis is the aperture of the larynx. What is probably meant is edema of the larynx This winter I have seen a number of such cases All the patients recovered

Albert Bardes, M D., New York

[A proof of the preceding was sent to Dr Reilly, who replies]

To the Editor —After reading the criticism of Dr Bardes, I may say that I am quite well aware of the mechanism of the death rattle as understood by the laity, but, in my experience, when the death rattle is present there is also present an accompanying pulmonary edema Doubtless the ultimate cause is the same in the two instances for both symptoms I did not state that edema of the glottis is invariably fatal This is the case only in elderly patients—those over 45 years of age, in whom a fatal issue may be predicted when this symptom is present As to the term "edema of the glottis," there may be an honest difference of opinion Osler regards the term "edematous laryngitis" as synonymous with edema of the glottis, or, more correctly, of the tissues from which the glottis is formed He prefers the term "edema of the glottis" It is a well established term for describing that terrifying condition which begins with a marked edema of the arytenoepiglottidian folds and false cords and sometimes below the true cords, thus practically closing the air passages In the aged it is practically always secondary to some other disease, and happy is he who can cure all such cases Thomas F Reilly, M D., New York.

Treatment of Diphtheria Carriers

To the Editor —Your answer to the query of Dr C J March (The Journal, Jan 1, 1916, p 51) is of value, and if the method of treating diphtheria carriers is thoroughly carried out, the mortality from diphtheria will be reduced It has been proved that patients discharged, after as many as three negative cultures have been obtained from the nose, mouth and throat, were still diphtheria carriers, the diphtheria bacilli being found in abundance in the deep crypts of the tonsil and folds of the adenoids The customary swabbing of the nose, mouth and throat is not sufficiently thorough to secure a culture from the supratonsillar crypts or the folds of the adenoids, and, therefore, carriers are being discharged to continue in the spread of the disease Not one carrier of diphtheria has been discovered who has had a complete removal of the adenoids and tonsils

Your answer would have been simplified had you instructed Dr March to have the child's tonsils and adenoids completely removed This would have instantly cured the child of the disease and prevented the patient from becoming a carrier, as well as the incurable complications that this treatment prevents T L Higginbotham, M D, Hutchinson, Kan

[Comment —The point to which attention is called by Dr Higginbotham is a good one That the removal of the tonsils and adenoids aids in the treatment of diphtheria carriers should have been mentioned —Ed]

Training of Medical Missionaries

To the Editor —Apropos the Current Comment on the "Training of Medical Missionaries" (The Journal, Aug 21, 1915, p 723), I am moved to give a bit of personal testimony in the hope that it may, by virtue of its coming as a voice from the other side of the world, have the added effect that Dives hoped for, in his conversation with Abraham, as recorded in the sixteenth chapter of St Luke I am not dead, rather very much alive to some things, even more so than when living in America. Here in southern Asia, a doctor must be alive, if he would even attempt to diagnose properly and treat the many diseases that occur in his practice In America I conceived the idea that a medical missionary should be an "all around doctor" Here I have realized that he must be more than that If he would be of much service medically to those to whom he is sent, he must not only be a good general practitioner, but also, to be of distinct service, he should have specialized in certain branches Tell every prospective medical missionary that if the need of the civilized country is not 'more doctors, but more doctor," doubly, trebly true is it out here

Will you bear with me one more word Let there be places where this additional training can be had by those who have offered themselves for foreign fields *for life* I have found no place where my appointment to a foreign country gave me any advantage when seeking postgraduate training not even in the hospitals which call themselves by the name of my church was there a single opening

Paul W Van Metre, M D, Nakawn Sritamarat,
Malay Peninsula
Superintendent, Sritamarat Memorial Hospital

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

STROGANOFF'S PROPHYLACTIC TREATMENT OF ECLAMPSIA—CALOMEL IN PREGNANCY

To the Editor —1 What is Stroganoff's method of treating eclampsia?

2 I should like some information regarding the use of calomel during pregnancy, and dangers of producing abortions and miscarriages Please omit my name

E A L

Answer —1 Stroganoff's technic was described in The Journal, July 3, 1909, p 86 A list of references to articles on his method appear in The Journal, Nov 30, 1912, p 1992 His most recent article on this subject was published in *Archiv fur Gynakologie*, 1913, xcix, No 2 Stroganoff's technic aims to prevent the convulsions by reducing the irritability of the nervous system, obtaining sleep by means of narcotics, removing everything liable to produce irritation, terminating the pregnancy, if necessary, and watching over the regular action of heart, lungs and kidneys Morphin and chloral are employed, with chloroform at first until the patient feels the effect of the chloral In moderately severe cases, 0 015 gm morphin is given first, in one hour or sooner, 2 gm chloral, morphin again the third hour, chloral the seventh, and 1 5 gm chloral again the thirteenth and twenty-first hours If the convulsions continue, delivery is hastened, but surgical measures are seldom necessary

2 Concerning the relation of calomel to pregnancy, "The Pharmacology of Useful Drugs," p 289, says, "Calomel has little action on the uterus, and moderate doses are therefore not contraindicated in pregnancy"

GONOCOCCI IN THE CEREBROSPINAL FLUID

To the Editor —On page 616, Volume I, No 4, of "The Medical Clinics of Chicago," Dr Tice makes the statement that the gonococcus is occasionally found (in cerebrospinal fluid) Are there any characteristics, morphologic, staining or cultural, by which the gonococcus could be differentiated from the meningococcus in the cerebrospinal fluid? If so, will you describe them?

H H Coleman, M D, New Philadelphia, Ohio

Answer —Although the gonococcus has occasionally been reported in cerebrospinal fluid, these cases are so rare as to be among the curiosities of bacterial localization They give little practical difficulty

In general it may be said that the meningococcus grows on mediums more readily than the gonococcus, but as every bacteriologist knows, strains of both organisms are encountered which are cultivated with greater ease or with greater difficulty than the average of their kind, so that absolute dependence could not be placed on this quality In fact, no method of staining and no morphologic or cultural difference could be relied on without fail for differential diagnosis Serologic tests would give the best basis for distinction A summary of all the characteristics is not likely to leave one in doubt about identification

CLEANING TEST TUBES

To the Editor —In washing glassware, especially test tubes, I have been troubled with a hazy white discoloration in the tubes that is practically impossible to remove by ordinary means Will you kindly give me some method by which they can be cleaned quickly and neatly and have a *clear luster?*

W E K

Answer —The possibility of removing the discoloration depends on what it is due to If the glass has been etched by alkali, or by the cultivation of bacteria in the tubes, there is no practicable way of restoring it to its original transparency If the stain is caused by some substance adhering to the glass, special solvents may be required to remove it, but usually the cleaning can be done by treating the glass with a sulphuric acid-potassium bichromate cleaning mixture

Apportioning the Cost of Health Conservation —If it is hazardous to human lives to produce an article of human usefulness, then the cost of production should include the cost of the conservation of health —*Ohio Public Health Jour*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Connecticut Regular, New Haven, March 14-15 Sec, Dr Charles A Tuttle, 196 York St, New Haven, Homeopathic, New Haven March 14 Sec, Dr Edwin C M Hall, 82 Grand Ave, New Haven Eclectic, New Haven, March 14 Sec, Dr T S Hodge, 19 Main St, Torrington

Florida Homeopathic, Jacksonville, March 10 Sec, Dr J B Griffin, St Augustine

Maine Portland, March 14 15 Sec, Dr Frank W Searle, 776 Congress St, Portland

Massachusetts Boston, March 14-16 Sec, Dr Walter P Bowers, Room 501, No 1 Beacon St, Boston

Missouri St Louis, March 20 22 Sec, Dr J A B Adcock, State House, Jefferson City

Wyoming Laramie, March 14 16 Sec, Dr H E McCollum, Laramie

Iowa October Report

Dr G H Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Oct 19-21, 1915 The total number of subjects examined in was 8, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 17, of whom 16 passed and 1 failed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Bennett College of Eclectic Medicine and Surgery	(1908)	84
Bennett Medical College	(1914)	88
Chicago Coll of Med and Surg (1913) 86 (1914) 87,	(1915)	86
Chicago Homeopathic Medical College	(1898)	88
Hahnemann Medical College and Hospital, Chicago	(1915)	90
Northwestern University	(1908)	83
Rush Medical College	(1915)	88
University of Illinois (1913) 92,	(1915)	87
Kentucky School of Medicine	(1903)	92
Harvard University	(1901)	90
National University of Arts and Sciences	(1914)	76
Meharry Medical College	(1909)	77
University of Toronto	(1911)	89
FAILED		
Barnes Medical College	(1904)	75 5*

* Fell below the required average in one subject

Arkansas Eclectic November Report

Dr C E Laws, secretary of the Arkansas Eclectic Medical Board, reports the oral and written examination held at Little Rock, Nov 9-10, 1915 The total number of subjects examined in was 12, total number of questions asked, 120, percentage required to pass, 75 The total number of candidates examined was 5, of whom 4 passed and 1 failed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Kentucky School of Medicine	(1896)	82 9
Eclectic Medical University	(1906) 81 1,	82 2
University Medical College, Kansas City	(1891)	83 2
FAILED		
Western Eclectic College of Medicine and Surgery	(1908)	51

Delaware December Report

Dr H W Briggs, secretary of the Medical Council of Delaware, reports the written examination held at Dover and Wilmington, Dec 14-16, 1915 The total number of subjects examined in was 10, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 6, all of whom passed Three candidates were licensed through reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
New York Homeo Med Coll and Flower Hosp (1914) 89 9,	(1915)	89 2
Hahnemann Med Coll and Hosp, Philadelphia	(1915) 85 8,	88 8
Jefferson Medical College	(1914)	81 6
Medico Chirurgical College of Philadelphia	(1915)	75 1

College	Year Grad	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Maryland	(1914)	Maryland
University of the City of New York	(1890)	New York
Hahnemann Med Coll and Hosp, Philadelphia	(1912)	Penna

Book Notices

A Handbook of Colloid Chemistry The Recognition of Colloids, the Theory of Colloids and Their General Physico Chemical Properties By Dr Wolfgang Ostwald Privatdozent in the University of Leipzig First English Edition Translated from the Third German Edition by Dr Martin H Fischer Professor of Physiology in the University of Cincinnati with the Assistance of Ralph E. Oesper Ph D, Instructor in Chemistry New York University, and Louis Berman, M D, Staff Physician Mount Sinai Hospital, New York Cloth Price, $3 net Pp 278 with 60 illustrations. Philadelphia P Blakiston's Son & Co 1915

For several years Wolfgang Ostwald has been one of the leading advocates of the importance of the study of the properties of colloids as a special division of chemical and physical science His book, the third edition of which has now received its first and long overdue translation into English has been an important agent in the great increase of interest and investigation in this field. Through his energy, a special journal on colloid chemistry, generally known as the *Kolloid Zeitschrift*, has been established Many Americans will also recall with pleasure the brilliant series of lectures on the fundamentals of colloid chemistry with which, in a tour among our universities a few years ago, he stimulated interest

From the standpoint of the medical and the biologic sciences too much stress cannot be laid on the importance of colloidal properties As Dr Fischer says in the preface to his translation "It happens that nature has chosen the colloid form in which to show her face. Crystalloid behavior is the exception, colloid behavior the rule, in the cosmos" The living organism is a mass of colloids, and therefore the more we learn about colloidal properties the more we shall learn of the properties of the living matter

Anything that is done to further active investigation in this field is to be commended and supported, and hence making Ostwald's standard work accessible to a wider circle is an enterprise that should be cordially endorsed To all progressive chemists and biologists the original German editions have been familiar and invaluable The scope of the book includes consideration of the distinctive features of colloid substances and their characteristic properties Their particular relation to biologic and industrial chemistry is not discussed the object of the author being to set forth the fundamental principles of colloid chemistry rather than its application Hence the book is invaluable to chemists and biologists, but is scarcely available for the medical man who has not specialized in chemistry He will find more of immediate value in Bechhold's work on "Colloid Chemistry in Biology and Medicine," a stimulating work which still awaits translation

How to Live. Rules for Healthful Living Based on Modern Science. Authorized by and Prepared in Collaboration with the Hygiene Reference Board of the Life Extension Institute Inc. By Irving Fisher Chairman, Professor of Political Economy Yale University, and Eugene Lyman Fisk M D Director of Hygiene of the Institute Second Edition Cloth Price $1 net Pp 345, with illustrations New York Funk and Wagnalls Company 1915

This book may be regarded as a conservative statement of the principles by which the individual may attain and keep good health, become a better and more efficient citizen, and round out a full, vigorous life. The authors and sponsors of the book—leading hygienists, physicians, publicists and professional men—are surety for the accuracy of the facts, figures and the advice It must not be assumed that it is a lugubrious compilation of killjoy regulations that the average person would feel inclined to dodge On the contrary, while endeavoring seriously to impress the reader with his responsibility as a member of society, and with the importance of proper personal hygiene to health and efficiency, and therefore to the "enduring satisfactions of life," it has clothed the assumed dry-as-dust facts regarding health in interesting habiliments, so that the book is reluctantly laid down One is at once interested, informed and benefited This book should be a nonfiction "best seller," and physicians should be propagandists in its behalf

Medicolegal

Municipalities Not Liable for Infection from Negligent Vaccination

(Howard vs City of Philadelphia (Pa), 95 Atl R 388)

The Supreme Court of Pennsylvania affirms a judgment entered for the defendant notwithstanding that a verdict was rendered in favor of the plaintiff for $5,000 damages for a negligently performed vaccination The court says that the health authorities of the city of Philadelphia established a quarantine in a certain district within the city limits in which the plaintiff resided, because it was infected with smallpox The authorities proposed to relieve from the restrictions of the quarantine such of the inhabitants as submitted to vaccination The plaintiff submitted, and was vaccinated by a physician employed by the board of health, without expense to himself His vaccination was negligently performed, and as a result another and different infection was introduced into his system, which after some months became so localized and virulent that amputation of one of his limbs became necessary Suit was brought against the city for the recovery of damages, and the facts above stated were established to the satisfaction of the jury The one distinctive ground on which the court below rested its conclusions, when it entered judgment for the defendant, notwithstanding the jury found for the plaintiff, was that by general rule municipalities are exempt from liability for the negligent acts of their officers and agents, except in case where the negligence occurs in the performance of some duty which has been imposed by law on the municipality The rule as thus stated by the court, while correct as far as it goes, leaves something to be supplied because of its conciseness If it be added to it that, in order to constitute an exception to the rule the duties so imposed must be imperative, and not discretionary, so as to make clear the distinction between duty and authority or power, and, further, that the duty must relate to the municipality's public or governmental functions, as distinguished from its private or corporate functions and duties, the rule as stated is one which has always been recognized in Pennsylvania, and obtains in most, if not in all, the other states The law sometimes imposes duties on municipalities which are legislative or judicial in their character, and therefore discretionary It is only with respect to the performance of these that no liability attaches With respect to those duties which are absolute and perfect, no exemption can be claimed in their performance It was not pretended that in this case what the city did was in discharge of a positive and imperative duty imposed on it by law As little could it be contended that in doing what it did it was exercising a corporate function, for the private advantage and benefit of its inhabitants It is clear beyond question that the negligence here complained of did not fall within the exception to the general rule in regard to municipal exemption, and that the general rule as above stated here governed

Incompetent Testimony of Physician in Inquisition of Lunacy

(In re Gates (N Y) 154 N Y Supp 782)

The Supreme Court of New York, Appellate Division, Third Department, in reversing an order affirming the findings of an inquisition of lunacy and granting a new hearing, says that it was error to permit the defendant's personal physician to testify as to the competency of his patient. Clearly it was indelicate for a physician in attendance on a patient to permit himself to be hired by another and go and make an examination of the patient for the purpose of testifying against him In the judgment of the court it was not only indelicate, but in violation of the privilege given to the patient under Section 834 of the New York Code of Civil Procedure. It was also error to permit a physician, in forming his opinion as to the competency of the alleged incompetent, to base it in part on his understanding and recollection of the evidence given by the petitioner's witnesses in court. If the petitioner wished to avail himself of anything brought out by the examination, the alleged fact should have been incorporated in a hypothetical question The physician, by the question put to him, was called on to form a conclusion as to what the evidence had established

State Board of Health Not Authorized to Employ an Attorney

(Fergus et al vs Russell State Treasurer, et al (Ill), 110 N E R 130)

The Supreme Court of Illinois says, in this suit to restrain the payment out of the state treasury of certain appropriations made by the general assembly, that the statute gives the State Board of Health no power or authority to employ an attorney, but, on the contrary, by Section 7 of Chapter 126a (Hurd's Statutes of 1913, page 2288), it is provided that in all prosecutions and proceedings instituted by the State Board of Health it shall be the duty of the state's attorney in each county to prosecute

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

January, III, No 7, pp 367 422

1 Study of Endameba Buccalis in Alveolodental Pyorrhea F M Johns, New Orleans
2 Dietetic Treatment of Sprue B K Ashford, Porto Rico
3 Complement Deviation Reaction Applied to Diagnosis of Moniliasis of Digestive Tract I G Martinez, San Juan, Porto Rico
4 Control of Asiatic Cholera on International Trade Routes A J McLaughlin, Washington
5 Case of Sprue with Necropsy E H Falconer, San Francisco, and A H Rowe, Boston
6 Breeding Places of Anopheles H P Barret, Charlotte, N C
7 Intestinal Parasites of Isthmus of Tehuantepec A K Moillet and F Carreno

Annals of Otology, Rhinology and Laryngology, St. Louis

September, 1915, XXIV, No 3, pp 429 746

8 Suspension Laryngoscopy and Its Accomplishments R C Lynch, New Orleans
9 Focal Infection in Etiology of Labyrinth Disease G E Shambaugh, Chicago
10 Infection of Ear with Vincent's Micro Organisms, Report of Sixteen Cases J A Mulholland, New York
11 Transplantation of Cartilage in Correction of Septal Deformities F O Lewis, Philadelphia
12 Report of Some Unusual Cases of Disease of Nasal Accessory Sinuses J R Winslow, Baltimore
13 Surgical Diseases of Superior Maxilla W P Barndollar, Pittsburgh
14 True Myxoma of Rhinopharynx, Report of Two Cases V Dabney, Washington
15 Report of Two Cases of Mastoid Abscess, Infective Thrombosis of Lateral Sinus and Jugular Vein, Resection of Jugular, Recovery J H Bryan, Washington
16 Cases of Lateral Sinus Thrombosis G W Boot, Chicago
17 Case of Brain Abscess with Unusual Findings G L Richards, Fall River, Mass
18 Case of Otitis Media and Mastoiditis Followed by Meningitis,
Operation, Recovery After Eight Years, Development of Cere
bral Abscess Operation, Death S J Kopetzky, New York
19 Roentgenographs of Mastoid in Certain Atypical Cases H Hays, New York
20 Standard Tonsillectomy J R Fletcher, Chicago
21 Local vs General Anesthesia in Nose and Throat Operations J C Beck, Chicago
22 Decompression for Relief of Choked Disk Following Thrombosis of Lateral Sinus H Friedenwald and J W Downey, Jr, Baltimore
23 Inferior Turbinate J A Cavanaugh, Chicago
24 Some Statistic Observations on Otolaryngologic Diseases Among
Negroes, Based on Fifteen Hundred Cases D Roy, Atlanta
25 Acute Hemorrhagic Mastoiditis H W Loeb, St Louis
26 Tonsil Operation, Inquiry into Actual Results Obtained in Series
of Cases D J G shart, Toronto
27 Case of Traumatic Mastoiditis C J Imperatori, New York
28 Facial Contractions During Radical Mastoid Operation C E Perkins, New York.
29 Differential Diagnosis of Laryngeal Motor Paralysis. O J Stein, Chicago

30 Case of Acute Meningitis Associated with Acute Suppurative Otitis Media, Both Produced by Streptococcus Mucosus Capsulatus R L Loughran, New York
31 Case of Acute Exacerbation of Chronic Mastoiditis with Cholesteatoma, Extensive Epidural Abscess, Purulent Pachymeningitis, with Exploratory Incision of Dura and Lateral Sinus, Recovery R L Loughran, New York
32 Labyrinth Probe F R Spencer, Boulder, Colo

Archives of Pediatrics, New York

December, 1915, XXXII, No 12, pp 881 950

33 *Foreign Body Pneumonias A Caille, New York
34 Disseminated Miliary Tuberculosis W F Northrup, New York
35 Value of Roentgen Ray in Intrathoracic Lesions in Children R G Freeman, New York
36 Case of Amaurotic Family Idiocy in One of Twins C Herrman, New York
37 *Macewen's Sign H B Wilcox, New York

33 **Foreign Body Pneumonias**—In one of the cases cited by Caille the spasmodic character of the cough, the expectoration of pus in an acute lesion, in the absence of amphoric breathing such as we find in cavity formation, gave rise to the suspicion of a foreign body irritation The roentgenogram revealed a large tack, with a large round head, in the right lung Rapid improvement followed the removal of the tack with the aid of the bronchoscope guided by the fluoroscope The physical signs cleared up, and the child was discharged cured The tack had been lodged in the lung about five weeks In the second case the roentgenogram showed a large nail in the left bronchus and partly in the trachea A lower tracheotomy was performed and the nail removed with the aid of the bronchoscope In the third case a shawl pin was found in the left bronchus and lung, the point projecting at the bifurcation in the trachea During a severe spasmodic coughing spell the patient coughed up the 2½ inch long brass shawl pin The pin had been in the child's lung forty-three days without inducing local inflammation

37 Abstracted in The Journal, June 26, 1915, p 2167

Arkansas Medical Society Journal, Little Rock

January, XII, No 8, pp 189 212

38 Obstetric Technic E C Meyers, Fort Smith
39 Anent General Practician D Smith, Hope
40 *Heart Inhibition During Vomiting D Gann, Jr, Little Rock
41 Practical Laboratory Diagnosis J C Simpson, Hamburg

40 **Heart Inhibition During Vomiting**—Gann says that while experimenting on intrathoracic and intra-abdominal pressures, the blood pressure was observed to fall during vomiting A series of experiments were performed to determine the cause of this fall In all experiments the blood pressure, the intrathoracic pressure and the movements of the abdominal wall were recorded Vomiting was induced in some cases by means of apomorphin, in others by filling the stomach with hot salt solution, hot soap suds, copper sulphate solution, etc In every case a high negative pressure was observed in the thorax during the act The pressure would fluctuate rapidly from zero to twenty-five or thirty centimeters (water) of negative pressure The blood pressure, however, always fell, sometimes to less than half its former level The fall in blood pressure was found to be due to a vagus inhibition of the heart, for on cutting the vagi while the vomiting was taking place, and while the blood pressure was at its lowest, there was an immediate increase in heart rate and rise to above the normal in blood pressure Furthermore, when the vomiting was induced after the vagi had been cut, there was a rise instead of a fall in blood pressure

Boston Medical and Surgical Journal

January 27, CLXXIV, No 4, pp 109 150

42 Orthopedic Work in War Hospital R B Osgood, Boston
43 Anthropologic Comments on So Called "Herbivorous" and "Carnivorous" Types of Man E A Hooton, Cambridge.
44 Mutism and Deafness Due to Emotional Shock Cured by Etherization D P Penhallow, Boston

Indiana State Medical Association Journal, Fort Wayne

January IX, No 1 pp 1 44

45 Case of Hysteria from Viewpoint of Freudian Psychology M A. Bahr, Indianapolis
46 Position of Otolaryngology Among Specialties J F Barnhill, Indianapolis

Iowa State Medical Society Journal, Des Moines

January I I No 1 pp 1-40

47 Classification and Treatment of Chronic Cryptogenetic Splenic Tumor Splenectomy W F Sanders Des Moines
48 Diagnosis of Osteomyelitis M J Kenefick Algona
49 Cooperation, What Does It Mean? C F Harris Grinnell
50 Detail of Worth's Muscle Exercises and Other Treatment for Strabismus (Concomitant) C C. Walker, Des Moines
51 Use of Duodenal Tube J F Churchill Chicago
52 Slight Injuries in Syphilitic Patients T H Glenn and W R Bates, Fort Dodge
53 *Hay Fever Producing Weeds in United States. W Scheppegrell, New Orleans.

53 **Hay-Fever Weeds in United States.**—The object of the American Hay-Fever Prevention Association of which Scheppegrell is president is defined by him as follows The dissemination of general knowledge of benefit to sufferers from hay-fever the education of the public regarding the weeds that are known to produce this disease, and the use of its influence and cooperation toward the eradication of such weeds By means of lectures and articles in the scientific and public press, it is endeavoring to educate the public in the relation of certain weeds to hay-fever, and the best methods for their avoidance and eradication

Journal of Biological Chemistry, Baltimore

January XXIV No 1 pp 1 89

54 *Experimental Diabetes after Pancreatectomy A A Epstein and G Baehr New York
55 *Effect of Phlorhizin on Formation of Glycogen in Liver A A. Epstein and G Baehr New York
56 Use of Phlorhizinized Dogs to Determine Utilizable Carbohydrate in Foods W D Sansum and R T Woodyatt, Chicago
57 Can Carbon Dioxid in Sea Water Be Directly Determined by Titration? S Morgulis and E. W Fuller Woods Hole Mass
58 Stability of Growth Promoting Substance in Butter Fat T B Osborne and L B Mendel, New Haven Conn
59 Cephalin Brain Cephalin P A. Levene and C J West New York
60 Glucosaminoheptonic Acid P A Levene New York.
61 Ammonia Derivatives of Sugars P A Levene, New York
62 Sphingosin Some Derivatives of Sphingosin and Dihydrosphingosin. P A Levene and C. J West New York.
63 Sphingomyelin P A. Levene New York

54 **Diabetes after Pancreatectomy**—Epstein and Baehr found that the hyperglycemia in experimental diabetes after pancreatectomy in the cat mounts progressively in the terminal stages of the condition because of diminution in the permeability of the kidneys This they believe furnishes an explanation of the excessive rise in the blood sugar of diabetics prior to the development of coma Experimental interference (by double nephrectomy) with the glucosuria of depancreatized animals also causes a rapidly progressing hyperglycemia This accumulation of sugar in the blood is said to be largely due to the gradual mobilization of carbohydrate from the liver and muscles

55 **Phlorhizin and Formation of Glycogen**—Phlorhizin, Epstein and Baehr say exerts a specific effect on the liver which does not become evident unless the kidneys are removed In other words, phlorhizin in some way stimulates the liver to build up glycogen With the kidneys intact, the glucosuric action of phlorhizin is so much more powerful than this liver action that the glycogen accumulations in the liver are rapidly diminished On removal of the kidneys, however, the glucosuric action is eliminated and the effect on the liver becomes manifest in a rapid building up of glycogen, even in a state of extreme starvation

Journal of Experimental Medicine, Baltimore

February XXIII No 2 pp 149 264

64 *Pathologic Effects of Atmospheres Rich in Oxygen H T Karsner Cleveland
65 Inhibition of Toxicity of Uranium Nitrate by Sodium Carbonate W deB MacNider Chapel Hill N C
66 *Intratesticular Implantation of Flexner Jobling Rat Carcinoma W H Woglom New York
67 *Experimental Syphilis in Rabbit Produced by Brain Substance of Living Paretic. U J Wile Ann Arbor Mich
68 *Study of Gastric Ulcers Following Removal of Suprarenals F C Mann, Rochester Minn
69 *Transplantable Carcinoma of Guinea Pig F S Jones New York.
70 Preservation of Living Red Blood Cells in Vitro Methods of Preservation. P Rous and J R. Turner New York
71 Id Transfusion of Kept Cells. P Rous and J R. Turner New York.
72 Cause of Rat Bite Fever K Futaki F Takaki, T Taniguchi, and S Osumi Tokyo
73 Biology of Peripheral Nerves in Transplantation R. Ingebrigtsen, Christiania, Sweden

64 **Atmospheres Rich in Oxygen**—The studies reported by Karsner show that atmospheres containing 80 to 96 per cent oxygen under normal barometric pressure produce in twenty-four hours, or more commonly forty-eight hours, congestion, edema, epithelial degeneration and desquamation, fibrin formation, and finally a pneumonia, probably of irritative origin and to be described as a fibrinous bronchopneumonia The important new points are the time relations of these changes and definition of the type of the pneumonia Other studies have noted slight passive congestion, but it is now established by Karsner that this is to be accounted for in most cases by dilatation of the right side or of both sides of the heart This congestion affects all the abdominal viscera and is accompanied by certain secondary changes such as cloudy swelling of the parenchymatous organs and phagocytosis of erythrocytes by endothelial cells of the mesenteric lymph nodes Although deficiency of oxygen may affect the hematopoietic system, the animals subjected to high oxygen percentages failed to show any demonstrable pathologic changes in blood, spleen, lymph nodes, or bone marrow, except for the presence of congestion

66 **Flexner-Jobling Rat Carcinoma.**—Rats were inoculated by Woglom in both testes and in the right axilla, each series at the same sitting and with an equal dose of the same tumor From three to seven days afterward, the tension in the left testis was lowered by incising the tunic through an abdominal incision under ether anesthesia, while the right testis was left undisturbed as a control The tumors in the opened (left) gland were not invariably larger than those in the unopened, as they would be were tension alone responsible for the smaller size of intratesticular growths That the release of pressure may occasionally exert some slight favorable influence, however, is suggested by the fact that neoplasms in the opened testis had in several cases grown through the incision in the tunic, furthermore, these growths were sometimes larger than those in the opposite testis That is to say, in thirty-nine rats, in which grafts succeeded in both testes, a distinctly larger tumor was found in the opened gland in twelve, while in only six was the nodule on this side smaller than that in the intact organ, in twenty-one rats the intratesticular growths were of uniform size The absence of metastases in the abdominal cavity, supports the observation of Jones and Rous, that the peritoneum, in animals at least, is not susceptible to metastatic attack unless the subendothelial connective tissues have been injured

67 **Experimental Syphilis in Rabbit**—Wile repeated the inoculation experiments of Forster and Tomasczewski Six cases were chosen from a large number of paretics The diagnosis from the clinical findings and from the spinal fluid was frank general paralysis The material was obtained from the brain In five of the six cases spirochetes were demonstrable The major portion of the material thus obtained was at once injected into the testes of a large rabbit The material from five patients was injected into the left organ and that from one patient into the right About two weeks after the inoculation, small hard nodules could be felt in both organs Aspiration of the nodules after four weeks showed large numbers of active, motile spirochetes These continued to be demonstrable up to the eleventh week after inoculation, when the animal died from an accidental trypanosome infection, the nature of which was not determined When the organisms were first demonstrable a second rabbit was inoculated from the aspirated testicular juice of the first animal Twenty-one days later, both testes were found to be the sites of hard nodules, from which again on aspiration, large numbers of spirochetes were demonstrable. These continued to be demonstrable in the second rabbit for five weeks, up to the time of the death of this animal from the same accidental infection A third rabbit was inoculated with the aspirated testicular juice of the second, and fifteen days after inoculation small nodules appeared in both testes, in which again large numbers of organisms could be found on repeated examinations

68 **Gastric Ulcers Following Removal of Suprarenals**—In over 100 experiments made by Mann lesions of the gastric and duodenal mucosa did not occur in suprarenalectomized animals subject to continuous etherization and were infrequent in animals subjected to the removal of only one suprarenal, but lesions in the stomach and duodenum occurred in about 90 per cent of the animals dying with the characteristic symptoms of suprarenal insufficiency after removal of both glands The lesions found in the gastric mucosa after death from suprarenal insufficiency consist of two main types, one is a widespread, superficial erosion, the other is a true, punched-out ulcer formation The gastric erosions practically always occurred in the fundic division, and in most cases the pyloric mucosa appeared normal The gastric ulcers were usually multiple, but a few stomachs contained only one ulcer Their position varied, they were found in the fundic and pyloric regions on both the greater and lesser curvatures Usually they occurred in the prepyloric division The duodenal mucosa was usually congested in the suprarenalectomized animals In five experiments there were definite ulcers These duodenal ulcers occurred just distal to the pyloric ring and appeared like cauterized areas about 1 5 cm in diameter The gastric content was always acid in the suprarenalectomized animals In a series of ten experiments in which sodium bicarbonate was administered after the removal of the last suprarenal, ulcers were found in one animal only This result would tend to show, as has been demonstrated in regard to the formation of other acute ulcers, that acid is a factor in their production In a series of ten experiments a gastro-enterostomy was performed during the interval between the removal of the suprarenals In only four of these animals were ulcers found It is possible to explain this result as due to a reflux of the alkaline intestinal secretion and the bile

69 **Transplantable Carcinoma of Guinea-Pig**—An adenocarcinoma of the mammary gland of an old guinea-pig has been successfully transplanted by Jones through eight successive series of animals It now appears much earlier and grows more rapidly The number of takes also has increased In two instances metastasis to the regional lymph glands (inguinal) has been observed Once microscopic metastases were found in the kidney The so-called precancerous changes observed in the breasts of women and mice suffering from mammary carcinoma were found in the mammary gland of the spontaneous tumor animal

Journal of Infectious Diseases, Chicago

February, XVIII No 2 pp 131 238

74 *Mode of Infection in Pulmonary Distomiasis Certain Fresh Water Crabs as Intermediate Hosts of Paragonimus Westermani K Nakagawa, Formosa, Japan
75 Milk Borne Paratyphoid Outbreak in Ames, Iowa M Levine and F Eberson, Ames, Iowa
76 Variations in Reaction of Blood of Different Species as Indicated by Hemolysis of Red Blood Cells when Treated with Acids or Alkalies J G Cumming, Boston
77 *Physical Chemistry of Disinfection J F Norton and P H Hsu, Boston
78 *Diphtheroid Bacillus of Preisz Nocard from Equine, Bovine and Ovine Abscesses I C Hall and R V Stone, Berkeley, Calif
79 Precipitation of Typhoid Bacillus by Means of Definite Hydrogen Ion Concentration C F Kemper, Boulder, Colo
80 *Leptothrix Associated with Chronic Hemorrhagic Nephritis G R Dick, G F Dick and B Rappaport, Chicago
81 Endamebae of Mouth Endameba Gingivalis (Buccalis) C F Craig, Fort Leavenworth, Kan

74 **Infection in Pulmonary Distomiasis**—Of three species of fresh-water crabs examined by Nakagawa the encysted larvae of the human lung distomes were found in two, the occurrence in the third being problematical The liver, the gills, and other organs of the crab that harbored a large number of encysted larvae were given to two puppies One of the dogs died sixty days after feeding Postmortem examination showed the lungs to have a number of cysts Within each cyst two or three distomes were present They had no eggs in the uterus at this time The other puppy died after a lapse of ninety days from feeding His lungs contained numerous cysts, in which adult distomes with eggs ready to be discharged were found Further observation showed that the encysted larvae that have been taken into the alimentary canal of the host, creep out of the cysts and making their way through the intestinal wall near the jejunum, reach the abdominal cavity They then penetrate the diaphragm and reaching the thoracic cavity, scatter all over the space under the pleura, whence they can easily find their way to the lung They pierce the lung parenchyma, and there the cysts are formed until they become fully grown These parasites can bore through various tissues and may reach other organs than the lung, where they form their regular cysts, but the lung seems to be the most favorable place for their development and the laying of their eggs, in other organs they can never reach the perfect growth

77 **Physical Chemistry of Disinfection**—Norton and Hsu summarize their work as follows Acids act as disinfectants through the agency of the hydrogen ions produced by electrolytic dissociation The disinfecting power of an acid is approximately proportional to the hydrogen ion concentration The addition to an acid of a salt containing an anion common to this acid, diminishes its disinfecting power, as the result of a decrease in the hydrogen ion concentration and an increase in the concentration of the undissociated acid molecules Salts which do not appreciably affect the dissociation of an acid, greatly increase the disinfecting properties of the acid Acid anions are positive catalyzers and undissociated acid molecules are negative catalyzers in acid disinfection

78 **B Preisz-Nocard in Animal Infections**—Hall and Stone isolated *B Preisz-Nocard* from characteristic abscesses in eleven horses and one calf *B Preisz-Nocard* is a diphtheroid bacillus, presenting characteristics as follows (1) the production of orchitis in guinea-pigs, as well as suppurative processes generally throughout the lymphatics, (2) the hemolysis of blood agar plates not containing an excess of fermentable carbohydrate, (3) the elaboration of a soluble toxin, resembling but not identical with that of diphtheria, yet being neutralized partly by diphtheria antitoxin This apparent partial neutralization suggests the existence of group reactions among soluble bacterial toxins analogous to the group reaction of precipitins and agglutinins The authors also draw attention to the uncertainty of experimental orchitis in guinea-pigs as a certain test for glanders, and emphasize the necessity of microscopic and cultural examination of pus from such lesions for diagnostic purposes

80 **Leptothrix in Chronic Nephritis**—The authors report a case of chronic nephritis, characterized by frequently recurring attacks of hematuria extending over a period of three years, and by leptothrix in large numbers in the urine The presence of the leptothrix in the urine is not accepted as proof that it caused the nephritis and hematuria with which it was associated, but the large numbers in which it was found, its toxicity for animals, and the marked improvement of the patient during vaccine treatment suggests a causal relation The patient received 3 doses of a vaccine from the leptothrix After the third dose, the urine, which had been macroscopically free from blood, became very bloody for three days Though she had previously had attacks characterized by general malaise and large amounts of blood in the urine at intervals of three to thirty days, another one did not occur during the next sixteen weeks Red cells were still found in the urine after the fourth and fifth injections After the ninth injection no erythrocytes were found in the urine, it still showed an occasional hyalin or granular cast The patient meanwhile had gone back to work and had resumed active outdoor exercise The urine remained free from red cells the following nine weeks that she was under observation Injections of one-half-million doses at intervals of one to two weeks were continued

Journal of Nervous and Mental Disease, Lancaster, Pa

January XLIII, No 1, pp 1 104

82 Critical Historical Review of Reil's Rhapsodieen W A White
83 Family Form of Pseudosclerosis and Other Conditions Attributed to Lenticular Nucleus W G Spiller, Philadelphia
84 *Speech Conflict — Natural Consequence in Cosmopolitan Cities — As Etiologic Factor in Stuttering M K Scripture and O Glogau, New York

84 **Speech Conflict.**—In order to throw some light on the etiology of stuttering as met with in the cosmopolitan city of New York Scripture and Glogau went over the histories of 200 cases of stuttering The analysis of their statistics makes them conclude that speech conflict is an etiologic factor in stuttering Among 171 male patients there were 33 whose stuttering was apparently brought about by speech conflict exclusively while in 4 cases negligent lisping in their own language had previously existed Among the 29 female patients there was only one to whom this cause could be attributed The most striking feature concerning these stutterers from speech conflict is the fact that their stuttering was acquired at the ages of 5 to 7 years Only in one instance was this later, the age was 9 years and this was explained by the fact that the patient came from Russia at the age of 7 and was therefore only confronted with the problem of speech conflict at a later age than other children Sixteen children started stuttering at the age of 6, seventeen at the age of 5 and four at the age of 7 It is interesting to see that the onset of stuttering either psychic or organic, may be from the ages of 1 to 15, while the stuttering from speech conflict occurs only at the ages of 5 to 7 In thirty-eight cases the etiologic factor proved to be a conflict between the mother tongue at home and English to be learned in school This speech conflict as an etiologic factor in stuttering is almost exclusively met with in the Jewish child, and particularly in the male sex

Journal of Parasitology, Urbana, Ill

December 1915 II, No 2 pp 51 98

85 Comparison of Endameba Cingivalis (Gros) and Endameba Histolytica Schaudinn A J Smith and M T Barrett, Philadelphia
86 Trematode Genus Telorchis with Descriptions of New Species H W Stunkard Urbana
87 *Insect Vector of Uta (Lupus Vulgaris), Peruvian Disease C H T Townsend Washington D C
88 Filaria Cingula Parasitic in Skin of Cryptobranchus Alleghenlensis F H Krecker Cincinnati
89 Life History of Gongylonema Scutatum B H Ransom and M C Hall
90 Stage of Piroplasma Bigeminum which Occurs in Cattle Tick, Margaropus Annulatus H Crawley, Washington, D C

87 **Insect Vector of Uta, Peruvian Disease**—The disease known as uta, occurring on the west face of the Andes in Peru has been proved to be due to a leishmania Townsend suggests that it is highly probable that the various forms of leishmaniasis thus far known are due to as many species of herpetomonads originally parasitic in the intestine of the insect carriers concerned, and that, with regard to the occurrence in man, these herpetomonads are as yet in the stages of parasitism ranging from habitually abnormal or frequent to merely accidental or infrequent

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December 1915 VII No 5 pp 557-617

91 *Absorption of Potassium Iodid by Perfused Thyroid Glands and Some of Factors Modifying It. D Marine and H O Feiss, Cleveland.
92 *Physiology of Stomach Action of Bitter Tonics on Secretion of Gastric Juice. L. D Moorhead Chicago
93 *Central Action of Digitalis as Tested by Cardio Inhibitory Center C. W Greene and J O Peeler, St Louis
94 *Influence of Some Drugs Used in Treatment of Gout (and Arthritis) on Elimination of Uric Acid and Other Waste Products from Blood W Denis Boston

91 **Absorption of Potassium Iodid**—According to Marine and Feiss artificially perfused thyroids take up and retain potassium iodid to the same extent that in vivo perfused thyroids do This characteristic is not shared by the liver, kidney, spleen or muscle. The amount of potassium iodid retained is independent of its concentration in the perfusion fluid Only surviving glands exhibit the ability of taking up potassium iodid Potassium cyanid inhibits this activity of the thyroid It is possible to wash out with defibrinated blood a small amount of the iodothyreoglobulin in an hour s perfusion even in intact glands rich in iodothyreoglobulin Autolyzing glands do not take up potassium iodid, and rapidly give up their stored iodin in the perfusate The potassium iodid stored in a thyroid gland from one hour's perfusion, whether in vivo or in vitro, is pharmacologically inactive

92 **Action of Bitter Tonics on Secretion of Gastric Juice**—The results on normal dogs with respect to appetite and the quantity and quality of the gastric secretion, Moorhead says, indicate the following conclusions 1 These bitters, acting either in the mouth or in the stomach, have no appreciable influence on the appetite 2 These bitters, acting either in the mouth or in the stomach, have no consequential influence on the quantity of the gastric secretion, although a slight uniform depression is noted from their action in the stomach 3 These bitters, acting either in the mouth or in the stomach, have no significant influence on the quality of the gastric secretion, although a slight rather uniform depression is observed in the free as well as in the total acidity from the action of the drugs in the mouth Moorhead's results with respect to appetite and the quantity and quality of the gastric secretion of cachectic dogs indicate the following conclusions 1 These bitters, acting both in the mouth and in the stomach, exert a favorable influence on the appetite The increase produced is not sufficient to bring the amount of food consumed up to normal, but the influence is definite and significant 2 These bitters acting in the mouth cause an increase both in the quantity and quality of the gastric juice secreted during the hour following the meal The qualitative increase is observed in both the free and total acidity, while the pepsin concentration remains fairly constant. The increase, it is true, is not great enough to bring either the quantity or the quality of the juice up to that secreted by the normal dog, but this increase is marked enough to be worthy of note These bitters, acting in the stomach, have no appreciable influence on the quantity or the quality of the gastric secretion

93 **Action of Digitalis as Tested by Cardio-Inhibitory Center**—Greene and Peeler found that digitalis strongly and directly stimulates the cardio-inhibitory center of the medulla Paralysis of the center by excessive action is shown by the escape of the heart during perfusion and by the failure of subsequent perfusions to produce inhibition Cumulative and persistent action on the inhibitory nerve center is indicated by the recurrence of various degrees of inhibition during subsequent perfusion with Ringer's solution Not only is the rhythm inhibited, but there is a blocking of the passage of the contraction wave from the veins and sinus to the ventricle by a decrease in conductivity

94 **Influence of Drugs in Treatment of Gout**—Benzoic acid when administered to men in large doses (8 gm per day) increases the uric acid excretion in the urine and decreases the uric acid content of the blood Cinnamic acid in the comparatively small doses used (4 to 6 gm per day) had little if any effect. Quinic acid and colchicum have also no effect on the uric acid elimination The same is true of para-oxybenzoic acid which shows none of the power possessed by its homologue, salicylic acid, of producing a lowered kidney threshold for uric acid None of these drugs produce any change in the nonprotein nitrogen content of the blood Benzoic acid, aspirin and atophan were found to have no effect on the creatin content of the blood

Maine Medical Association Journal, Portland

January VI No 6 pp 221 252

95 Study of Heart Beat with Especial Reference to Its Rate. P D White Boston.
96 Chronic Gastric and Duodenal Ulcer W H. Bradford, Portland
97 Acidosis. C M Robinson Portland

Medical Record, New York

January 22 LXXXIX No 4 pp 135 176

98 Radium C. E. Field, New York.
99 Health Insurance E H Lewinski Corwin New York.
100 Reduction of Obesity A W Ferris Saratoga Springs.
101 Dangers of Hasty Diagnosis of Pulmonary Tuberculosis. M. Fishberg New York.
102 Peptic Ulcer from Point of View of Medical Selection H. W Cook Minneapolis
103 Changing Falsetto Voice to Baritone. F M Hallock New York

increase of phagocytosis, In weak concentrations (for instance 3½ volumes per cent of CO_2 and less) phenol increases the phagocytosis, and in higher concentrations (for instance, 10 per cent) it has a paralyzing effect Potassium cyanid has the same effect on phagocytes, stimulating in slight doses, paralyzing in somewhat greater quantities

5 **Tetanus Successfully Treated by Antitoxin**—The points to which Kilner draws particular attention in this case are (1) the recovery in spite of well-marked symptoms and a short incubation period (nine days), (2) the large doses of serum administered, 46 500 units in all, (3) the very slow and gradual relaxation of spasm

Edinburgh Medical Journal

January XVI No 1 pp 1 88

9 Inversion of Ilium and Sacrum and Ischium and Pubes (Iliosacral and Ischiopubic Bony Segments) as Causes of Deformities of Female Pelvis. D B Hart
10 Incidence of Tuberculosis T Shennan
11 Hysterical Mastoiditis J S Fraser
12 Neuritis of Cochlear Division of Eighth Nerve Following Exposure to Cold J S Fraser
13 Fatty Tumor of Hypopharynx Obstructing Larynx J S Fraser
14 Case of Cleidocranial Dysostosis D M Greig
15 Case of So-Called Tetanism J S Fowler

Indian Medical Gazetta, Calcutta

December 1915 L No 12 pp 441 480

16 Analysis of Snake Bite Cases Reported in Central Provinces G W P Dennys
17 Injuries to Eye Resulting from Accidents at Polo A E J Lister
18 Coolie Anemia C. E P Forsyth
19 *Treatment of Kala Azar with Intravenous Injection of Metallic Antimony R. U N B Bahadur
20 Clinical Observations on Kala Azar P Murugesan
21 Case of Primary Atheroma of Pulmonary Artery and Its Branches Contributing to Valvular Insufficiency of Heart T S Tirumurti
22 New Cataract Operation M Corry

19 **Kala-Azar Treated with Injection of Metallic Antimony**—Bahadur claims originality for the use of antimony in kala-azar One grain of metallic antimony is made into a thoroughly homogeneous paste with sufficient liquid glucose in a glass mortar and then mixed with 20 c c normal saline This is injected into the vein Any sediment of antimony left inside the syringe is subsequently mixed with normal saline containing 5 per cent glucose, and then injected into the vein. This process is repeated several times till no antimony is left inside the syringe About 40 to 45 c c of normal saline is required to inject 1 to 1½ grains of metallic antimony So far the results are encouraging No untoward results, such as plugging of the capillaries, have followed the intravenous injection of metallic antimony Sometimes the patient suffered from rather severe diarrhea, which, however, stopped in twenty-four to forty-eight hours

Journal of Tropical Medicine and Hygiene, London

January 1 XIX No 1 pp 1 16

23 Streptococcal Puerperal Fever in Anglo Egyptian Sudan A. J Chalmers and S Atiyah

Lancet, London

January 8 I No 4819 pp 61 116

24 Medicine Magic and Religion W H R Rivers
25 *Study of Shell Rock. C S Myers
26 Advantages of Warm Anesthetic Vapors and an Apparatus for Their Administration F E Shipway
27 Flora of Wounds and Flora of Putrefaction A Distaso
28 *Simpson Light W D Harmer and E P Cumberbatch.
29 Hyperthyroidism as Cause of Irritable Heart of Soldiers C P White and F Hernaman Johnson.
30 Case of Shrapnel Injury to Right Parietal Cortex. H M Anderson and H L. C. Noel
31 Traumatic Dislocation of Hip-Joint in Child H Platt and H M von Mengershausen.
32 Sanitation in Billets and Camps A. White.

25 **Study of Shell Shock**—A selected few of various cases of "shell shock' which he has had the opportunity of treating in the field by means of hypnosis are cited by Myers The cases are total amnesia, rhythmic spasmodic movements, mutism and stupor Myers has hypnotized, or attempted to hypnotize, twenty-three men with shell shock The conditions under which he worked were such that no patient was subjected to further hypnotic treatment unless he proved readily hypnotizable on the first trial The immediate results may be summarized as follows 1 Apparently complete cures, 26 per cent 2 Distinct improvement, 26 per cent 3 Failure to hypnotize, 35 per cent 4 No improvement after hypnosis, 13 per cent

28 **Simpson Light.**—The Simpson light is emitted from an electric arc formed between electrodes made by a special process from a mixture of the ores of certain metals, the chief one being a tungstate of iron and manganese, known as wolfram The Simpson light is made up of rays of two kinds 1 Visible rays These are the visible rays of the luminous spectrum, violet, blue, green, etc, down to red, these rays together produce white light 2 Invisible rays These are heat rays and ultraviolet rays It is to the latter that the therapeutic properties of the light are said to be due. At St Bartholomew's Hospital a number of cases with various types of disease have been treated rodent ulcer, lupus, syphilis, asthma, vasomotor rhinitis, nasal catarrh and sinusitis, otosclerosis and eczema The Simpson light seems to stimulate the healing of wounds Cases of shrapnel wound have been benefited When disease affects the deep parts or subcutaneous parts there is usually no benefit.

Bulletin de l'Académie de Médecine, Paris

Dec 28 1915 LXXIV No 52 pp 795 822

33 *The Absolutely Aseptic Operating Room (La salle aseptique pour operations est elle realisable? Etude technique.) H G Richter and R Blanchard
34 *Motor Localizations in Peripheral Nerves P Marie, H. Meige and A Gosset.
35 *The Bradycardia of Fatigue. A. Gouget.
36 Retraction of Paralyzed Muscles after Wounds of Nerves L. Lortat Jacob and A Sezary
37 Geometrical Formula to Locate Metal Foreign Bodies with the Roentgen Rays (Nouveau procédé de repérage radioscopique des projectiles.) A Charlier
38 *Direct Oxygen Treatment of Tuberculous Fistulas and Abscesses (De l action des injections d oxygène dans le traitement des tuberculoses chirurgicales en hyperhemie) Gendron and Bouchet

33 **The Aseptic Operating Room.**—Richter is an architect who has designed an operating room which can be kept aseptic. It is to be ventilated exclusively with sterilized air The spectators stay in an adjoining room with glass front which is only 2.5 meters from the operating table The surgeon's words are transmitted by a telephone and megaphone to the spectators There is a protecting zone around the operating room, in this the sterilizing service is installed This in turn is protected by an outer zone which contains the anesthetic room and the surgeons' and nurses' toilets The doors when closed present an absolutely smooth surface continuous with the inner wall

34 **Localization of Motor Functioning in Peripheral Nerves**—Marie and his co-workers have been continuing their research with direct electric stimuli applied to a wounded trunk nerve exposed at an operation By this means they have studied the distribution of the fibers destined for the different muscles tributary to this nerve. In 21 of the 64 cases the electricity failed to elicit any response in the connected muscles, the severe wound having interrupted all conducting power in the nerve In the 43 other cases, all the groups of muscles responded in turn as the trunk fibers were stimulated, or only certain muscles, according to the extent of the injury The fibers were tested with a needle electrode and no apparent harm resulted in any way The trunk nerve twists naturally more or less in its course, and the gunshot or shell wound may further alter its position, as also the efforts to expose it The nerve should be exposed for 6 or 8 cm and two glass rods should be worked beneath it The electrodes are then applied to the portion of the nerve between the glass rods One assistant should control the motor reactions and another should have charge of the regulation of the electric—faradic—current, commencing with a very weak current or interposing a rheostat Stimulation of the antero-external fibers in the median nerve in the forearm,

for example, causes contraction in the muscles of pronation of the arm The findings in each of the principal trunk nerves are described in detail, and the necessity for exact coaptation of the fibers in operating is emphasized

35 **Fatigue Bradycardia**—After excluding all other possible causes for the pulse between 40 and 60 noted in 44 out of 133 apyretic men in the hospital, Gouget explains it by extreme fatigue, loss of sleep and emotional stress Its transient nature and the prompt influence of change of position or of amyl nitrite confirm its nervous origin The blood pressure was usually normal or a little below

38 **Oxygen in Treatment of Tuberculous Processes**—Gendron and Bouchet refer only to tuberculous fistulas and abscesses and state that these show no benefit from the oxygen unless the tuberculous process has an active circulation of blood through it The first step therefore is to insure this active local circulation of blood, either by superheated air, revulsion from cold water, rubbing or other means The abscess is then cleaned out and oxygen is introduced directly into the abscess, through a two-way tube, under very slight pressure, and with constant manometer control In thirty-seven abscesses and nineteen fistulas thus treated, no surgical measures were required No abscess thus treated entailed a fistula There are no drugs to be absorbed, while the healing proceeded exceptionally fast, they report, under the hyperemia and the oxygen

Paris Médical

January 1, VI, No 1, pp 1 40

39 Psychoses from Emotional Shock or Shaking up of the Nervous System (Les psychoses commotionnelles) G Ballet and J R de Fursac
40 *Psychiatry in the Active Army P Chavigny
41 *A Service for Treatment of Nervous and Mental Disease among the Troops (Un centre de neurologie et de psychiatrie d'armee) G Roussy and J Boisseau
42 *Hemianopsia from Wounds of Occipital Lobe (L'hemianopsie bilaterale homonyme en quadrant seul reliquat de blessures graves du lobe occipital) M Villaret and A Rives
43 Posttraumatic Contractures and Their Treatment A Léri and E Roger
44 *Radiotherapy in Spastic Affections of the Spinal Cord from Wounds in War G Bonnus

40 **Psychiatry at the Front**—Chavigny emphasizes that the earlier the nervous and psychic disturbances get proper treatment the better the result He also insists on the importance of treating the psychic and nervous disturbances at the same time as any physical lesion which may need treatment For instance, digestive derangement should be treated at the same time as hysteric paralysis, when both are noted in a patient Progressive reeducation is the key to effectual treatment of paralysis and motor and hysteriform sensory disturbances, but such patients generally expect and do better when given some medicine to take, such as a potion containing eucalyptol The faradic current is always an effectual means to reeducate the sensibility when applied properly, as he describes With the cure of the anesthesia the paralysis and hyperesthesia in the limb subside too The mental disturbance after explosions proved rapidly curable in 95 per cent of the cases The cure occurred sooner and was more complete when the men were kept in the general hospital, without attempt at isolation, but kept quietly in bed, with a purge if there was constipation or diarrhea, and tepid or cold douches The cure seemed to be hastened by a mild emotional shock, such as asking the man to write or dictate a letter to his family

41 **Neurology Near the Firing Line**—An illustrated description is given of a hospital for nervous and mental affections which has been at work now for five months near the clearing station Fully 34 per cent of the men were back in the trenches in two or three weeks Those with merely functional disturbance were thus saved from getting into ruts This central service for neurology and psychiatry also permitted the detection at once of organic troubles requiring specialist measures

42 **Hemianopsia from Wound of the Occipital Lobe**—Villaret and Rives have recently encountered six cases in which a wound in the occipital lobe had entailed as the only disturbance in vision a homonymous bilateral hemianopsia Systematic examination for hemianopsia will certainly modify the estimation of the outcome and of future earning capacity, in cases of injury of the skull when possibly nothing else would suggest that the nervous centers had been irreparably injured

44 **Radiotherapy of Spastic Affections of the Spinal Cord After Gunshot or Shell Wound**—Bonnus reports here eleven cases The best results were realized in spastic hemiplegia from injury of the cord in the neck, but some benefit was realized in nearly every case The interval since the injury ranged from two to ten or eleven months, and the spastic phenomena had shown no signs of retrogression for many weeks The benefit was apparent even after the first sitting As the spastic phenomena subsided, the pain from the inflammation of the roots also became less or ceased entirely The exposures were usually made once a week, to a total of six to nine The dose was 1 or 1 5 H at the point of the lesion

Revue de Chirurgie, Paris

August, 1914—November, 1915, XXXIV Nos 8 9 pp 137-432 Last indexed Aug 22, 1914, p 711

45 *Circumscribed Nutritional Disturbance in Long Bones Simulating a Tumor (Les dystrophies osseuses—kystes simples, cals soufflés, osteite fibro kystique—simulant les tumeurs des os) L Berard and H Alamartine
46 Coxa Valga G Worms and A Hamant To be continued
47 Treatment of Abdominal Wounds in War (Du traitement des plaies de l'abdomen par projectiles de guerre) E Quénu
48 The Principles for Treatment of Fractures. P Delbet
49 Treatment of Septic Wounds (Essai de réhabilitation des anti septiques) L Bérard and A Lumière
50 The Varying Shape of the Stomach According to the Site of Lesions in it (Les caractères morphologiques de l'estomac d'après le siège des lesions) X Delore and H Fayol
51 Fractures of the Astragalus (Etude des fractures de l'astragale les fractures vertico transversales du col et du corps) R Baudet
52 Diagnostic Importance of Emphysema of the Scrotum (L'emphyseme scrotal signe de plaie colique rétro peritonéale) A Chalier

45 **Pseudotumors in Long Bones**—Berard and Alamartine devote fifty pages, with illustrations, to the study of localized dystrophy of the long bones The resulting simple cyst or fibrocystic osteitis or puffed up callus simulates most deceptively a true tumor of the bone Differentiation is extremely important, as these lesions are not at all malignant and never recur when the cyst has been emptied or other conservative operation has been done The whole trouble is merely some interference with the nourishment of the bone at that point Insufficiency of the ductless glands which regulate the nutrition of bone tissue—the thyroid, in particular—seems to be a factor in some instances The trouble generally dates from childhood, and in 80 per cent there was a history of traumatism, but Berard and Alamartine think that the bone was already affected at the time of the traumatism, in a certain proportion of the cases at least The regular location of the dystrophy close to the epiphysis and the integrity of the latter are special features of the fibrocystic type of osteodystrophy When the trouble is in the shaft of the bone there is generally a solitary cyst When the epiphysis is invaded the lesion is of the type known as exuberant callus, *cal soufflé* This latter type occurs only in adults, the protecting epiphyseal cartilage having disappeared The dystrophy is always a solitary lesion When first seen by the physician there may be what seems to be a malignant tumor, or spontaneous fracture, or vicious consolidation of a fracture with exuberant callus The pseudotumor is generally found in order of frequency at the upper end of the humerus or femur or at either end of the tibia When in the shaft itself, the tibia is usually the bone involved There is no reaction in the soft parts, and the joint is almost invariably intact The lesion remains stationary a long time, not giving trouble until it is injured in some contusion Then it begins to enlarge and the bone shell may fracture, with resulting inability to use the limb Blundering assumption of a tumor may lead to entirely unnecessary mutilating operations Tumors in the long bones, particularly in the young, run a much more rapid course, but roentgenoscopy is the main reliance in differentiation, as the shadow of the cystic lesion of the bone is unmistakable, the round or fusiform light

space with the linear shadow outlining it and the periosteum not thickened anywhere. The only other bone affection that might be confused with it is echinococcus disease, but with this there are multiple light spots and the joint is usually involved.

Berliner klinische Wochenschrift

Dec 27 1915 No 52 pp 1521 1556

53 *Diagnosis of Perforation with Abdominal Wounds (Ueber Bauchschusse im Felde) Kausch
54 *Cancer of the Orbit (Mit Erhaltung des Augapfels operiertes aprikosengrosses Fibrosarkom der Augenhohle) Halben
55 *Petroleum Ether in Bacteriologic Examination of Stools (Untersuchungen uber die Bedeutung des Petrolathers fur den Nachweis von Typhus und Paratyphusbakterien im Stuhl) H C Hall
56 Foreign Pharmaceuticals (Wie sollen wir uns in Zukunft zur pharmazeutischen Produktion des feindlichen Auslandes stellen?) A Lewy

53 Diagnosis of Extent of Injury in Cases of Abdomiral Wounds.—Kausch has found that it is possible to determine whether or not the intestines or other viscera have been injured by the discovery of free air in the abdominal cavity. This is an almost certain sign of perforation, according to his experience, which has been wide and varied. The army corps to which he is consulting surgeon has served in turn in Belgium and France, Alsace Galicia, Russian Poland and Serbia. A very small incision will reveal whether there is free air in the abdominal cavity. He makes the exploratory buttonhole for the purpose in the epigastrium under local or general anesthesia. The thicker the abdominal wall, the longer the incision from 1 to 3 cm. The peritoneum need be only punctured, a pinhead hole is enough. If air streams out, he proceeds at once to a regular laparotomy. If not, the patient is spared a major operation for the time being at least. He has had cases in which a bullet passed through the abdomen, front and rear, without perforating the gastro-intestinal tract. When there was perforation, death was inevitable without operative relief and he is convinced that his prompt operating saved a certain proportion of such cases. No one was ever harmed by the operation after an abdominal wound. Kausch was kept informed by telephone where fighting was under way, so that he was on the spot, ready to operate, before the wounded began to come in.

54 Cancer Removed from Orbit without Destruction of Eyeball.—Halben gives an illustrated description of a case in which he removed a fibrosarcoma, 3.5 by 4 cm in size, from the orbit. The growth was easily shelled out and the eyeball replaced. Vision has improved since until the man can count fingers at 25 cm. This is the second case in which Halben has operated in this way, but in the other case vision had long been lost in the eye involved.

55 Benzin in Bacteriologic Examination of Stools.—This is practically the same article as the one summarized in The Journal, Jan 22, 1916, p 317. The abstract contains an error corrected later, page 466, as petroleum ether (not ordinary ether, as stated in the abstract), is meant. Tables are given which show the remarkable way in which the hydrocarbons of the paraffin series inhibit the growth of the colon bacillus while permitting typhoid bacilli to proliferate unchecked. As already stated, this effect is the more pronounced the lower the boiling point of the petroleum distillates in question. With benzin (boiling point, 80 or 90 C.), there is still some growth of colon bacilli, but with petroleum ether with a boiling point below 50 C. there is scarcely a trace of growth, and with the distillate known as pentan (boiling point 38 C.), the colon bacilli show no traces of growth while typhoid bacilli proliferate luxuriantly.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec 25 1915 XLV No 52 pp 1633 1664

57 Professor Theodor Langhans C Wegelin
58 Roentgen Treatment of Uterine Cancer (Zur Behandlung des Uteruskarzinoms durch Rongenstrahlen) H Guggisberg and M Steiger
59 *Pellagra in Switzerland (Ueber den pellagrosen Symptomenkomplex bei Alkoholikern in der Schweiz) J Jadassohn

59 Pellagra in Switzerland.—It has been generally accepted that pellagra is unknown in Switzerland and Germany, but Jadassohn has encountered four cases at Bern in which three women and one man presented it, and Bloch has reported a case of pellagra at Basel in a strict vegetarian. The first symptoms in Jadassohn's cases had been the changes in the skin, diarrhea and stomatitis followed, and later the nervous and mental disturbances. He does not attempt to decide how much of the psychosis was due to the pellagra and how much to alcoholism, all four were addicted to liquor. One patient was the wife of a teacher and necropsy disclosed heart disease as the direct cause of death. The other patients recovered under dieting, astringents and opium for the diarrhea and salves for the hands. The follicular hyperkeratosis in the face subsided spontaneously. The article is to be continued.

Deutsche medizinische Wochenschrift, Berlin

Dec 16 1915 XLI No 51 pp 1505 1536

60 Advantages of Early Operative Treatment of Wounds (Ueber Wundbehandlung im Kriege) O Zuckerkandl
61 Functional Nervous Disturbances in the Wounded (Funktionelle Nervenstorungen bei Kriegsteilnehmern, nebst Bemerkungen zur traumatischen Neurose) E Meyer
62 Functional Systolic Heart Murmurs (Ueber systolische funktionelle Herzgerausche) G Treupel
63 *Experiences with Malignant Phlegmons. v Tappeiner
64 Plaster Cast for Fracture of Upper Arm (Der Gipsverband bei Oberarmfrakturen) M Anker and E Mosse
65 *Pylorospasm Yields to Large Doses of Atropin (Atropin bei Pylorospasmus) K Ochsenius
66 Radiotherapy of Gonorrheal Epididymitis. (Behandlung der Epididymitis gonorrhoica mit der Nitra Therapielampe) H. L. Heusner

December 23 No 52 pp 1537 1564

67 *Pituitary Treatment of Exophthalmic Goiter and Hyperthyroidism (Ueber die Wirkung des Hypophysenextrakts bei Thyreosen) J Pal
68 *Mechanical Cause of Sciatica and Flatiron Treatment (Zur Aetiologie und Therapie der Ischias) J Csiky (Budapest)
69 The Physiologic Bases for Coagulation of Blood and Means to Arrest Hemorrhage (Ueber die physiologischen Grundlagen der Blutstillung und uber ein neues Blutstillungsmittel Thrombosin) L Hirschfeld and R. Klinger (Zurich)
70 Economical Technic for Bacteriologic Research (Wiederholte Benutzung von Bakteriennahrboden und Ersatz von Fleischextrakt durch Pflanzenextrakte. Die Verwertbarkeit der konservierten Nahrboden fur den Feldgebrauch — nach Uhlenhuth und Messerschmidt) F Guth
71 Present Status of War Surgery (Ergebnisse der bisherigen kriegschirurgischen Erfahrungen) H Matti. Commenced in No 49
72 Present Status of War Internal Medicine. (Ergebnisse der bisherigen Kriegserfahrungen auf dem Gebiete der inneren Medizin) Reckzeh. Commenced in No 49 and continued
73 Field Treatment of Suppurative Processes on the Legs (Zur Behandlung der Pyodermatosen der unteren Extremitaten im Felde) M Strauss
74 Treatment of Wounds with Warm Baths and Ultraviolet Rays. V Hufnagel Jr

63 Malignant Phlegmons.—Tappeiner relates that the phlegmon with early livid discoloration of the skin is even more malignant than the gas phlegmon. Both are the work of anaerobic germs and hence prophylaxis requires ample opening up of wounds and "open" treatment. He has seen both forms develop when the man was wounded at several points.

65 Atropin for Pylorospasm.—Ochsenius remarks that the experiences in Czerny's pediatric clinic have demonstrated that children can bear much larger doses of atropin than was formerly supposed possible. This heralds a new era in treatment of pylorospasm, for doses of from one to three drops of a 0.01:100 solution of atropin three or four times a day are proving effectual in curing pylorospasm. If it does not relieve, we can confidently assume that there is congenital stenosis of the pylorus. Two cases are described in detail showing the prompt curative action of the atropin. He repeated the three-drop dose five or six times during the day, thus giving a total of 0.75 or 0.9 mg of atropin. To avoid dilatation of the vessels in the skin by the atropin, he gave one-drop doses, before feeding, increasing to three drops, and keeping this up for two or three weeks and then reducing it. The first child was a month old and was in collapse when the large doses of atropin were started, after failure of other measures during three weeks of treatment. The vomiting stopped at once and the weight increased by an average of 21 gm a day for five weeks. The atropin was kept up intermittently for nearly ten weeks, and the child came out finally well and strong although gastritis had also to be contended with The other child developed the pylorospasm when three weeks old and by a mistake it was given eight feedings in the twenty-four hours with atropin each time This brought the daily dose of atropin to eight times 0 15 mg a total of 1.2 mg, which it bore for a week without the slightest harm The maximal daily dose for an adult is said to be 3 mg Both infants were breast-fed

68 **Pituitary Treatment of Excessive Functioning of the Thyroid**—Pal's attention was called to this line of research by the antagonistic action on the arteries of pituitary extract and thyroid extract He found that subcutaneous injection of an extract of the infundibulum part of the hypophysis cerebri had apparently no influence on the normal thyroid and on ordinary goiter But it displayed a pronounced action on the thyroid when functioning to excess as in exophthalmic goiter The symptoms subside although the thyroid may increase in size under its influence This increase was always in the vesicles alone, suggesting that the secretion in the vesicles and the production of thyrotoxin are separate processes The article is based on sixteen cases of exophthalmic goiter and hyperthyroidism In three cases the debility was so extreme that operative measures could not be considered, but the patients improved so much under the pituitary treatment that they were then successfully operated on Another case demonstrates, he states, that pituitary treatment is able to arrest destructive retrogression in the excessively secreting thyroid In this and another case related the thyroid trouble was evidently brought on by the therapeutic use of iodin It had been given in the last mentioned case for arteriosclerosis in a man of 44, and had entailed symptoms of exophthalmic goiter They improved under pituitary treatment, but vascular spasms developed The treatment was stopped, but local gangrene and death from myocarditis soon followed This case warns for special care in pituitary treatment of weak heart with arteriosclerosis In fact, great caution must be constantly observed with pituitary treatment as the individual response to the dosage varies within extremely wide limits

68 **Nature and Treatment of Sciatica**—Csiky shows by the anatomic relations of the parts that a very important factor in development of sciatica is the compression of the nerve against the tuberosity of the ischium by asymmetrical sitting on a hard seat Few persons sit squarely and symmetrically, but this is the only way to avoid squeezing the nerve against the bone The constant irritation from this may set up finally a neuritis in the sciatic nerve Prevention and treatment call for a symmetrical position and a cushioned seat After failure of other measures, he has often succeeded in curing sciatica by applying heat with a flatiron, holding it against the nerve as the patient lies on his sound side, the knee drawn up Warm covers are kept on the leg above and below and the flatiron is held against the nerve for half a minute to a minute at each point and then moved along, the aim being to heat the tissues thoroughly and deep and keep the heat in The affected portion of the nerve is near the buttocks region, and it is not necessary to apply the heat much lower down A ten minute sitting once a day is enough, and better results are obtained by commencing with mild heat

Medizinische Klinik, Berlin

Nov 28 1915 XI, No 48, pp 1307 1336

75 *Experimental Demonstration of Efficacy of Vaccination against Typhoid and Cholera (Experimentelle Untersuchungen über die Wirksamkeit der Typhus und Choleraschutzimpfung) A v Wassermann and P Sommerfeld
76 Serologic Tests for Typhus (Ueber Serumreaktionen bei Fleckfieber) E Gotschlich, W Schürmann and Bloch
77 War Epidemics in 1913 Balkan Campaign (Einige Beobachtungen über Kriegsseuchen im Balkankriege 1913) A. Böhme
78 *Surgical Experiences with Jacketed Bullets (Kriegschirurgische Erfahrungen mit den Mantelgeschossen) J Bogdanik
79 *Bacteriologic Experiences with War Diseases (Bakteriologische Erfahrungen über Kriegsseuchen) H Aronson Concluded
80 Petrolatum Treatment of Large Wound Cavities (Zur Behandlung grosser Wundhöhlen) H Martin
81 Charcoal as Aid in Cultivation of Typhoid Bacilli (Die Verwendung der Tierkohle zum Nachweis von Typhusbacillen) P Kuhn
82 *Familial Nature of Jaundice in the Newly Born (Zur Klinik des Ikterus neonatorum) H Abels

December 19 No 51, pp 1391 1416

83 Hypnosis in Treatment of War Hysteria (Zur therapeutischen Verwendung der Hypnose bei Fällen von Kriegshysterie) M Nonne Concluded in No 52
84 *War Maladies in the Civilian Population (Ueber Kriegskrankheiten der Zivilbevölkerung) I Boas
85 Paratyphoid B in Six Months' Infant E Mayerhofer
86 Rubber Bulb for Pipetting in Laboratory Work (Zur Verhütung von Laboratoriumsinfektionen) L Paneth
87 *Vertebral Affections in Convalescence from Typhoid (Wirbelerkrankungen in der Typhusrekonvaleszenz) E Lyon
88 Possible Danger of Photodynamic Disturbances from Eosin Staining of Fodder (Zur Eosinfärbung der Futtergerste) F Schanz and E Rost

75 **Experimental Testimony to the Efficacy of Vaccination Against Typhoid and Cholera**—Wassermann and Sommerfeld recall that injection of killed typhoid or cholera germs causes an accumulation of specific immune substances in the blood which are able to kill the corresponding typhoid or cholera germs Healthy blood already possesses bactericidal properties, and the vaccination merely enhances this normal property Living typhoid or cholera germs can be injected under the skin and even into the blood, but infection does not result unless the germs reach and pass through the epithelium of the intestines The question of the efficacy of vaccination depends on whether the lining of the intestines is rendered thereby less permeable for the germs To decide this by animal experimentation is difficult, as monkeys alone are susceptible to typhoid and cholera germs by the mouth Laboratory animals are absolutely refractory as a rule, especially mice Even when three loops of a highly virulent culture of typhoid bacilli are introduced directly into the stomach of a mouse, none of the hundreds of millions of the germs seem able to get a foothold in the abdominal wall, although virulent bacilli can be recovered from the intestines up to twenty-four hours later These facts are the more remarkable because paratyphoid bacilli pass readily through the bowel wall and set up a fatal disease Mouse blood is strongly bactericidal for typhoid and cholera bacilli, as is shown by the rapid disappearance of these germs when large amounts are injected subcutaneously

It seems plausible to assume that there is a direct connection between the powerful bactericidal property of the blood and the lack of permeability on the part of the bowel lining This assumption is sustained by the fact that when the bactericidal property of the mouse blood is reduced by various means, the typhoid and cholera bacilli are able to get a foothold in the intestinal epithelium and soon pass through it and induce fatal typhoid or cholera, as the case may be There are various ways of reducing the bactericidal property of the blood One means is by a second infection Wassermann reported years ago that a simultaneous second infection was almost certain to reduce the resisting power so low that the animal yielded to the first infection to which, under natural conditions, it was immune Likewise, a sterile extract of killed typhoid or paratyphoid bacilli injected subcutaneously binds and uses up the natural protecting substances in the blood This leaves the blood defenseless, and the animal is thus susceptible to infection to which it naturally is immune This defenseless condition, however, is only a transient phase, the healthy organism promptly replenishing its store of immune substances unless depressed by being underfed

In the experimental research related the mice were kept without food for a day or two Then they were given a subcutaneous injection of 0 5 c c of a sterile aqueous extract of typhoid bacilli (artificial aggressins) By this means the bactericidal power of the blood was sensibly reduced Then a loop of living typhoid bacilli in a bouillon suspension was introduced directly into the stomach, and no food given thereafter The mice were killed in from twenty to forty-eight hours, and the bacilli were refound in the heart, spleen and liver in six of the thirteen animals and in none of the controls Similar experiments with cholera germs gave analogous results All testify that the bactericidal power of the blood is directly connected with the susceptibility of the bowel tissue to invasion by typhoid and cholera bacilli As prophylactic vaccination of man against these diseases materially enhances the bactericidal power of the blood against the causal germs, we hence have reason to assume that the prophylactic vaccination also reduces the susceptibility to these germs This reduced susceptibility, however, is liable to fluctuate under the influence of undernourishment secondary infections etc It is not a stable protection like that afforded by vaccination against smallpox These facts emphasize that proper nourishment, avoidance of secondary infections and general hygiene are factors of the utmost importance in warding off typhoid and cholera, after vaccination as well as under other conditions Any increase in the prevalence of other infections must bring with it an increase in the incidence of typhoid in spite of the antityphoid vaccinations But the experimental research reported confirms anew the great value of the protection afforded by antityphoid and anticholera vaccination

78-79—These two articles are listed in the table of contents of our exchange and the first is said to be accompanied by twenty-four illustrations The seven pages containing these articles had been cut out

82 **Familial Character of Jaundice in the Newly Born**—Abels calls attention to two laws which he has discovered in icterus neonatorum, firstly that it occurs in all the children of a family if it develops at all, and, secondarily that its intensity decreases regularly from the first child downward This suggests that both maternal and fetal factors cooperate in it

84 **The War and the Health of the Civilian Population**—Another article by Boas on this subject is reviewed below, abstract 105 He says that gastro-intestinal disturbance seems to be no more prevalent during the war than at other times, which demonstrates that the "war bread" has not done harm On the whole, he declares the simpler and thriftier mode of life consequent on the war seems to have raised the level of the general health and he thinks the populace will profit by this lesson after the war is over He has not found nervous dyspepsia or diabetes more frequent than in ordinary times Gallstone trouble is encountered with special frequency in the wives of soldiers, and it is more prevalent in men than usual He recently had a gallstone case in a youth of 16 Cancer of the digestive organs is becoming surprisingly frequent in his practice Scarcely a week passes without his encountering two or three new cases, and he has been impressed with the youth of the patients, in some recent cases the cancer was in the rectum liver or stomach in young women of 21, 24 and 27 years, respectively Whether this is an actual increase in cancer can be determined only when the general mortality statistics for the period are known

87 **Typhoid Vertebral Trouble**—Lyon writes from the military convalescent home at Spa, Belgium, to describe seven cases of an inflammatory process in vertebrae during convalescence from typhoid In only two cases was it severe, with intense pains and swelling of the soft parts and fever The vertebral affection persisted for two, three, or four months in all, long latent phases alternating with exacerbations There was very little tendency to suppuration, and the prognosis was favorable with final complete recovery He warns that pains in the back during convalescence call for careful examination of the vertebrae Even mild posttyphoid vertebral affections may be accompanied with great pain, but permanent recovery is the rule

Münchener medizinische Wochenschrift, Munich

Dec 21 1915 LXII No 51 pp 1745 1780

89 Impairment of Earning Capacity from Nervous Consequences of Accidents (Zur Begutachtung nervoser Unfallfolgen) P Horn.
90 Asthma Need Not Materially Impair Fitness for Military Service (Asthma und Felddienstfahigkeit) M Saenger
91 Agglutination of Gartner s Bacilli along with Typhoid Bacilli an Aid in Diagnosis of Typhoid (Die Mitagglutination der Gartnerbazillen ein Hilfsmittel zur Typhusdiagnose.) G Seiffert
92 *Peritonitis with Gas Production in Free Abdominal Cavity (Zur Symptomatologie und Therapie der Pneumoperitonitis) H Doerfler
93 *Vaccination against Typhoid Rouses Old Latent Disease (Fall von tertiärer Lues nach Typhusschutzimpfung) K Bardach
94 *Technic for Healing by Primary Intention after High Amputation of the Rectum A Schafer
95 Treatment of Beginning Intestinal Disease (Behandlung beginnender Darmkrankheiten im Felde) Neubauer
96 Mild Cases and Bacteriology of Dysentery (Erfahrungen uber leichte Ruhrfalle) C Kittsteiner (Zur Bakteriologie der Ruhr im Kriege) E Seligmann and L Cossmann
97 Paratyphoid A among the Troops Forty Fight Cases (Paratyphus A Erkrankungen im Felde) Klinger
98 Plastic Tendon Operations and other Measures for After Treatment of Wounds in War (Nachbehandlung von Kriegsverletzungen) G Fischer
99 Notes of an Ophthalmologist at the Front (Augenarztliche Beobachtungen aus einem Notreservespital der sudwestlichen Front) A Lowenstein
100 Bridge Plaster Casts (Zur Technik der Gipsbruckenverbande) H F O Haberland
101 Plaster Casts for Fractured Upper Arm (Neue einfache Gipsverbandtechnik bei Behandlung der Oberarmschaftbruche in Semiflexionsstellung) L. Oelsner
102 Clamp for Small Vessels (Der Angiokompressor — Gefasquetscher) O v Herff
103 Tendon Transplantation Corrects Paralysis from Wound in Lumbar Plexus O Orth

92 **Pneumoperitonitis**—Doerfler reports a case of subacute peritonitis in which the bowels moved but the distension of the abdomen was not reduced by the passage of flatus The distension was so extreme that it impeded the movements of the diaphragm but the general condition and the pulse kept good for three weeks and there was no vomiting The gas was released by repeated punctures but this did not remove the cause and finally the patient succumbed with the ordinary symptoms of septic peritonitis Necropsy revealed an encapsulated focus of peritonitis in the upper abdomen which might easily have been cleared out if it had been discovered in time The peritonitis was traced to the stump of the mesentery which had been resected in the course of an operation for scrotal hernia The catgut may have been contaminated

93 **Tertiary Syphilis after Antityphoid Vaccination**—In Bardach's case a supposedly entirely healthy man of 40 with healthy children noticed swelling and redness in the left chest soon after vaccination against typhoid The trouble proved refractory to salves and similar measures but yielded at once to treatment for syphilis The man had never suspected that he had syphilis but the vaccination had evidently roused an old always latent syphilis to tertiary manifestations The Wassermann proved positive also and a minute scar was found on the penis which had been there for twenty years but had been ascribed to a saddle bruise at the time

94 **High Amputation of the Rectum**—Schäfer draws the proximal stump out through the wound, letting it hang down for 8 or 10 cm below the wound which, with the whole buttocks are carefully protected by a cover of adhesive plaster, etc The patient lies on his side and the stump hangs in a suspended urinal In four of the five cases thus treated the wound healed by primary intention The projecting stump shrivels and conditions for a good sacral anus are thus provided

Therapie der Gegenwart, Berlin

December 1915 LVI No 12 pp 441-480

104 *Serotherapy and Anaphylaxis from Standpoint of General Practitioner (Bedeutung der Anaphylaxie fur den praktischen Arzt) U Friedemann
105 *Management of Gallstone Cases (Meine Erfahrungen über die Behandlung der Cholelithiasis) I Boas.
106 Recent Experiences with Cholera at Budapest Eighty Nine Cases (Erfahrungen uber die Cholera asiatica) A Galambos
107 Ulceration in the Colon and Rectum (Ueber Colitis suppurativa und Ulcus chronicum recti) G Klemperer and L Dunner Commenced in No 11
108 *Overstretching and Weakening of the Ligaments and Muscles of the Foot Causing Arch to Fall and Foot to Twist Sideways (Ueber Heilung des Plattknickfusses) M Katzenstein
109 *Camphor Phenol in Treatment of Long Infected Bullet Holes (Behandlung langer infizierter Schusskanale) E Mosse

104 **The Importance of Anaphylaxis for the General Practitioner**—Friedemann protests against the term "anaphylaxis," saying that Behring's term *Ueberempfindlichkeit,* which may be translated 'hypersusceptibility or 'oversensitiveness," much better describes the condition The complete picture of serum sickness includes fever, vomiting, swelling of glands and joints, edema and an exanthem, but it is rare for more than one or two of the symptoms to appear The usual incubation period is eight to thirteen days unless the individual

has been injected before with the serum, in which case the symptoms may come on almost immediately very severe, amounting to actual collapse in some cases Only recently a physician was brought to a base hospital in severe serum sickness, as he had given himself prophylactic injections of antitetanus serum, antidysentery serum and diphtheria antitoxin, one after the other

Man and dogs display far less tendency to anaphylaxis than guinea-pigs Serotherapy has been applied in thousands of cases in the contagious wards of the great public hospital at Berlin during the last ten years, but only three cases of severe anaphylactic phenomena developed and none of these three patients died Gaffky was able to find only two authentic cases of fatal serum sickness in Germany during the entire period since serotherapy was introduced, and in one of these two fatal cases the injection was the first the child had received Statistics are less favorable in America, Friedemann adds, quoting Rosenau and Anderson's (1906) nineteen fatal cases, but they were mostly in those given the serum for the first time The phenomena of anaphylaxis in guinea-pigs seem also to be severer in America, he quotes that Rosenau and Anderson lost 100 per cent of their guinea-pigs with induced anaphylaxis while 50 per cent survived in Otto's experiments in Germany, and only 25 per cent of the guinea-pigs died in Besredka's experiments in France

Notwithstanding the mildness, the rarity and the slight danger from serum sickness in man, it is annoying for the patient and worries the physician when it occurs, but all the evidence shows that the tendency to anaphylaxis does not develop before the sixth day He reiterates that the therapeutic serum can be injected confidently within this interval, and each injection seems to postpone the anaphylactic reaction, so that a patient with epidemic meningitis can be safely given the antiserum through weeks at a time, not letting the intervals extend to six days Diphtheria antitoxin can be safely administered in the same way The tendency to anaphylaxis usually dies out more or less completely in six months, but instances are known in which it was still pronounced after five years The intravenous route is much more liable to induce the phenomena of anaphylaxis than by subcutaneous or intramuscular injection

The phenomena of antianaphylaxis can also be counted on to ward off serum sickness Injection of a small amount of the serum induces an antagonistic condition to anaphylaxis, so that a following large injection causes no disturbance Otto recommends on the basis of his experimental research and clinical experience a preliminary injection of 1 c c of the serum four hours before the main injection This simple procedure is advisable when the patient has asthma or there is other reason to fear an idiosyncrasy even to a first injection Ascoli's suggestion to use cattle or sheep serum to vary the nature of the serum is not practicable yet Horse serum is less toxic During 1913 there were from 5,000 to 6,000 cases of diphtheria in Berlin and the mortality in the hospitals averaged 15 per cent Braun reported that only 1 62 per cent contracted diphtheria among the other members of the family given prophylactic injections, while from 30 to 35 per cent developed it in those not given the prophylactic injections

105 **Treatment of Cholelithiasis** —Boas relates that the war with its nervous strain, the changes it has brought about in the financial status, the food and other conditions of living has entailed many ailments not only among the troops but in the civilian population, such as never were encountered on the same extensive scale in times of peace Chief among them, according to his experience is gallstone trouble Cholelithiasis affects mostly women, and especially married women, and these are the ones who are hardest hit by the war, worrying for husband and sons, the breaking up of their own home, and, connected with this, the neglect of their own health, the high prices of provisions—these and other circumstances combine to prepare the soil for the development of gallstones or fan a latent tendency into a flame Cholelithiasis, he remarks, may thus be regarded as a war malady Internal medicine has only a limited field in management of cholelithiasis To claim otherwise, he continues, is to reveal a childish misconception of the mechanism of gallstone production

The custom of giving morphin to arrest the attack goes directly counter to Nature's efforts to expel the foreign body The pain can be relieved in other ways, by hot compresses, hot tea, etc, which reenforce Nature instead of neutralizing her efforts If a sedative is absolutely necessary, use the smallest doses, and select chloroform, papaverin or codein, explaining to the patient that by abstaining from morphin there is much better chance that the concrement may be expelled and not give cause for future attacks Perhaps the reason why there are so few "successful attacks" nowadays is because morphin is given so freely

He has for years derived great benefit from local bloodletting, scarifying the skin in the gallbladder region and keeping up the bleeding with a suction bell It is easy to draw considerable blood in this way This is especially useful with acute gallbladder trouble or acute enlargement of the liver It is astonishing to see the complete subsidence of all disturbances, the day after this bloodletting the patients able to go about their work as usual He adds that when we consider the mechanical conditions, the assumption that measures to promote the flow of bile will wash away the stones or prevent the formation of new concrements, is as fantastic as the naïve idea that gallstones in the body can be dissolved by chemical agents

A number of factors are known to help in eliciting gallstone attacks, and avoidance of these factors tends to ward them off Persons with gallstone trouble almost invariably have a history of habitual constipation and functional disturbance in the stomach, usually achylia gastrica, or there may be hyperchlorhydria or sagging of the stomach and bowels Undigested or half digested food in the duodenum presses on and obstructs the common bile duct, or offers opportunity for migration of microbes into the bile passages The fact that the gallstone attack occurs when the digestive tract is overloaded, confirms this assumption Gallstone attacks never seem to occur with stenosis of the pylorus The behavior of the stomach must receive more attention than hitherto in management of cholelithiasis Large meals, especially at night, should be strictly avoided In short, he regards dietetic measures as the main element in treatment of cholelithiasis, small light meals at intervals of two or three hours, avoiding raw fruit, salads, black bread and pickles As cholelithiasis is such an essentially chronic affection, treatment must be continued to correspond Of great value are the various elements of spa treatment, rest, dieting, regular meals, baths and outdoor exercise, besides drinking the mineral waters, but he orders a six or twelve months' stay This offers the most favorable chances for keeping the gallstone trouble latent

A stone impacted in the common bile duct is dangerous mainly on account of the cholemia with its depressing influence on the general health and the uncontrollable pruritus He has never known of an instance of a gallstone being forced out of its nook by medical measures alone Hence he advocates operative measures here, without wasting time on others But medical measures are generally effectual in simple catarrhal or purulent gallbladder disease, all that is required is cautious dieting, ice to the liver and small doses of narcotics When the inflammation in the bile passages or gallbladder is very severe, with fever and chills, the systematic administration of calomel, 0 1 gm three times a day, kept up at least four weeks, may save the patient an operation The Russians, who introduced this calomel treatment, give larger doses, up to 0 5 gm several times a day Boas has had this treatment fail in a few cases, but as a rule it is effectual After the chills and fever are arrested by it, he resumes the calomel again if the trouble flares up again Conditions are more favorable for retrogression when the disease process is in the gallbladder alone He has never been successful with medical measures in chronic cholecystitis or in the disturbances from adhesion to other organs Palliative treatment does little good and operative relief is called for, especially when the patient has not the time or means for rest cures, etc As regards the rare recurrence of gallstone trouble after an operation, Boas remarks that it is never comparable to the primary trouble, and usually yields to a course of spa treatment The disturbance may be due to recurrence of stones or to postoperative adhesions

108 **Treatment of Flatfoot that Bends Over**—Katzenstein relates that the trouble is primarily in the weak and stretched tibionavicular ligament The foot bends over and the arch falls in consequence Treatment should aim to shorten and strengthen the ligament involved, and this is readily accomplished by injection of 0 5 c c of a 4 per cent solution of formaldehyd into each side of the ligament, distributed at several points This hardens and actually tans the ligament, causing it to shrivel He has a plaster cast worn for a month and by the end of another month not a trace is left of the flatfoot and knock-ankle disturbances His only failures have been in cases in which other ligaments were involved He has never attempted the injection into other ligaments Local anesthesia is necessary and he gives a little morphin besides

109 **Camphor-Phenol for Seton Wounds**—The general rule is to slit the tissues and expose the floor of the seton wound throughout, but Mosse has found that it is possible to avoid these mutilating operations He draws a strip of gauze through the seton, keeping the gauze wet with a mixture of 100 parts phenol to 200 parts triturated camphor

Wiener klinische Wochenschrift, Vienna

Dec 16 1915 XXVIII No 50 pp 1373 1404

110 Gastro-Intestinal Affections in Army Medical Practice. (Die militararztliche Konstatierung von Magen und Darmkrankheiten) W Zweig
111 Pyramidon in Treatment of Erysipelas (Pyramidon als entzündungsbeschrankendes Mittel bei Erysipel) H Januschke
112 Peritonitis from Rupture of Bile Passages Two Cases (Zur Kenntnis der durch Gallengangrupturen bedingten Peritonitis) F Ermer
113 Antibody Production after Vaccination with Various Antityphoid Vaccines (Immunkorperbildung bei Impfungen mit verschiedenen Typhusimpfstoffen) M Grobl and K Hever
114 Improved Technic for Bacteriologic Study of Cholera (Vergleichende Untersuchungen mit festen Cholera Elektivnahrboden Erganzung zur Aronsonschen Methode) W Stern
115 Treatment of Frostbite. (Behandlung der Erfrierungen) K. Wagner
116 Living Lice Known to be at least Seven Months Old (Zur Frage der Lebensdauer der Kleiderlaus) Wiener
117 Splint for Fractured Thigh (Neue Schiene zur volkommenen Fixation von Oberschenkelbruchen) E v Gergo

Policlinico, Rome

December 1915 Surgical Section No 12 pp 557 604

118 Fifth Successful Operation on Record for Removal of Primary Tumor in Body of Pancreas (Contributo alla chirurgia del pancreas) G Serafini
119 Experimental Research on Plastic Repair of Defect in Gallbladder (Ricerche sperimentali sulla riparazione delle perdite di sostanza della cistifellea mediante innesti liberi di vena, auto- ed omoplastici) G Aperlo and C L Rusca
120 Tumors of the Palate. (Sui cosidetti tumori misti del palato) G Morone. Commenced in No 9
121 Abdominal Wounds in War (Considerazione sulle ferite d arma da fuoco dell abdome.) O Cignozzi.

Mitteilungen a. d med Fakultät der k. Univ Tokyo

1915 XIV No 2 pp 217 416 Last indexed Oct 30 1915 p 1593

122 *Septic Jaundice (Ueber die Pathogenese des septischen Ikterus) T Ogata and T Mitamura
123 *Catarrhal Jaundice. (Zur Pathogenese des Icterus catarrhalis.) T Mitamura.
124 *Thymus Transplantation (Recherches expérimentales sur la transplantation du thymus I) Y Tongu
125 *Bone Marrow Transplantation (Ueber Transplantation von Knochenmark) Y Tongu
126 Phenomena Suggesting Secretion in the Epidermic Cells of Amphibia Larvae. (Ueber Sekretionserscheinungen an den Epidermiszellen von Amphibienlarven) S Saguchi. Colored Plates
127 Physiologic Degeneration of Cells. S Saguchi Colored Plates

122 **Pathogenesis of Septic Jaundice**—The necropsy findings in four typical cases of septic jaundice all showed degenerative changes in the parenchyma of the liver and deficiency of bile Hence stagnation of bile could not be incriminated The bile capillaries were not distended Oligocholia and oligochromia were pronounced in each case, this important element in the picture of septic icterus seems to have escaped attention hitherto They are signs that the liver cells are not working properly This was evidenced further by the albumin found in the scanty bile present The germs cultivated from the four cases were the *Streptococcus longus*, the *Staphylococcus albus* and the *Diplococcus lanceolatus* The patients were three women of 21, 26, and 34, with the clinical diagnosis of puerperal fever, and one man of 34 who had succumbed to meningitis of otitic origin

123 **Catarrhal Jaundice**—Mitamura reports the case of a previously healthy man of 24 who died nine days after the stormy onset of catarrhal jaundice with high fever, pronounced icterus and delirium Necropsy confirmed the assumed gastro-intestinal catarrhal condition with mechanical obstruction to the outflow of bile at the mouth of the common bile duct The spleen was not enlarged, and he knows of no case of Weil's disease in which a mechanical hindrance to the outflow of bile, from catarrhal conditions in the duodenum, was discovered at necropsy The microscopic findings in the liver are reproduced

124 **Transplantation of the Thymus**—Tongu describes the work in this line done by Scalon (1900), Basch, Bircher (1912) and others on rabbits and dogs, and then reports the details and results of his own experiments He used about twenty dogs and fifty rabbits, but many of the animals died at once or soon after the operation, either from infection or weakness The transplanted thymus in these animals had either been absorbed or had decayed, especially in the center In only three dogs and eight rabbits were the results conclusive They demonstrated apparently that the most favorable location for autoplastic transplantation of thymus tissue is the peritoneal cavity Implants in the spleen, under the skin or peritoneum, and between the abdominal muscles were resorbed more rapidly The thymus tissue never showed signs of regeneration but displayed a tendency to atrophy In some of the animals it persisted as long as two months, in the mesentery region, showing merely slight atrophy, as is evident from the view given of the microscopic findings in one such case

125 **Transplantation of Bone Marrow**—The same writer reports similar research on seven dogs and ten rabbits with autoplastic transplantation of bone marrow The osteoblasts proved most active when an emulsion of periosteum had been injected or transplanted They were less active when a segment of bone marrow was transplanted, and least active after injection or transplantation of an emulsion of bone marrow The newly formed bone tissue resulting from the transplantation of periosteum and bone marrow was gradually destroyed by the osteoclasts, disappearing completely in time Tongu describes the research of others with transplantation of bone marrow and discusses the various questions raised by his experience

Russkiy Vrach, Petrograd

1915 XIV No 45 pp 1057 1080

128 *The Various Stages of the Action of Poisons on Tissues (O dieistvii yadov v razlichnie periodi prebivaniya ikh v tkanyakh) N P Kravkoff
129 Symptomatology and Treatment of Asphyxiation with Poisonous Gases. G A Kolossoff
130 *Bacteriology of Gangrene (Izsliedovanie po bakteriologie gangrenoznikh protzessov) I I Shukevich

No 46 pp 1081 1104

131 The Purposes of Russian Sanatoria Society V N Sirotinin
132 *The Cause of Favorable Action of Cod Liver Oil in Spasmophilia (Otchego zavisit blagopriyatnoe diestvie ribyago zhira pri spasmophilii?) I A Shabad
133 Colostomy in Gunshot Wounds of the Rectum A. G Machivariani
134 *Poisoning with Denatured and Wood Alcohol in Kazan Hospitals. (Otravlenie drevesnim i denaturirovannim spirtom v Kazani za 1914 g) I S Krivonossoff
135 Mental Derangement from Mushroom Poisoning Agaricus Muscarius T H Bielugin
136 A Case of Diaphragmatic Hernia G A Sokoloff

128 **Stages of Action of Poisons on the Tissues**—Kravkoff distinguishes the stage of invasion, the stage of saturation of the tissues with any given poison, and the stage of elimination These three stages he studied on the isolated heart

and ear vessels of rabbits, by means of Ringer's or Locke's fluid First he determined the action on these organs of a normal fluid, after which the latter was passed with various poisons dissolved in it, paying especial attention to the stage of saturation, when the tissues retain the poison for a certain period He also determined the simultaneous action of poisons such as morphin combined with nicotin, hedonal and nicotin, etc The results obtained demonstrate that when the tissues are saturated with a poison of a certain concentration they become less sensitive to the same poison, even in a stronger concentration Especially is this true of nicotin The tissues saturated with a poison become less sensitive not only to the same poison, but also to other poisons of the same or other pharmacologic groups Thus, when saturated with hedonal, they react less to chloroform, in the case of nicotin, they are less sensitive to pilocarpin, in the presence of morphin they become less sensitive to nicotin etc Simultaneous combination of two poisons—outside of the stage of saturation with one of them—causes phenomena of combined action, the clinical picture of one of them predominating Thus, the simultaneous action of chloroform and nicotin gives the typical action of nicotin The simultaneous presence of one poison in the tissues and their saturation with it modifies essentially the physiologic action of another poison, giving results different from those obtained by the simultaneous action of the two poisons

130 **Bacteriology of Gangrene**—Shukevich examined eighteen cases of various gangrenous processes and found polymicrobic infection in all, though Welch's bacillus was apparently the most frequent cause of gaseous gangrene In putrid wounds, not complicated with gaseous gangrene, Welch's bacillus also occurred very frequently, hence the latter does not always lead to formation of gaseous gangrene The putrid character of the wounds may be due to infection with *Bacillus sporogenes A* and *Bacillus proteus vulgaris*

132 **Limitations of Efficacy of Cod Liver Oil in Spasmophilia**—Shabad found from his clinical observations that the favorable action on spasmophilia of cod liver oil or of the phosphorus contained in it is by no means specific, because it is inconstant It is apparent only when there is a combination of spasmophilia with florid rickets, and is of no value in other cases The action of cod liver oil on spasmophilia is most probably due to the better assimilation of lime salts In rickets, therefore, where assimilation of lime is below normal, cod liver oil or phosphorus is of value However, in cases in which the assimilation of lime is above normal, as during recovery from rickets, or in spasmophilia unaccompanied by rickets, cod liver oil cannot have any favorable effect on the symptoms of spasmophilia

134 **Intoxication from Substitutes for Alcohol**—During 1914, in two of the large hospitals of Kazan, 1,052 cases of alcoholism were registered In 23 per cent, that is, 240 cases, the poisoning was due to denatured alcohol, varnish or Cologne water All kinds of trades and ages (below 10 and up to 70) were represented and are listed in the tables given About 50 per cent of these patients were between 20 and 30 Laboring men and artisans were the usual victims Of 45 ward patients, 30 died, of whom 19 succumbed during the first twelve days, 8 died on the second day and 3 on the third Of 10 patients treated in another hospital, 8 died, 5 of whom died during the first twenty-four hours following the poisoning The majority of the patients were brought to the hospital in a comatose state The amounts ranged from one-fourth glassful of denatured alcohol to three bottles of Cologne water Though cases of chronic alcoholism from liquor are now rare, yet poisoning with other kinds of alcohol, such as wood alcohol, etc, are becoming quite frequent Hence Krivonossoff pleads to have the retail uncontrolled sale of substitutes for liquor forbidden by law

Finska Lakaresallskapets Handlingar, Helsingfors

1915, LVII, No 4, pp 373 502

137 *Syphilis Affecting the Central Nervous System J Hagelstam
138 Menstruation in Finland E Waren
139 *Pylorospasm in Young Infants (Behandlingen of pylorospasm hos spädbarn) E Lovegren, (Om pylorospasmus hos dibarn.) W Pipping

No 5, pp 503 662

140 The Blood Picture in Children with Bothriocephalus (Om blod bilden hos botriocefalusbärare) G Becker
141 Extension Treatment of Gunshot or Shell Wound of Lower Jaw (Til behandlingen af skottfrakturer i nedre kaken med exten sionsförband) R Faltin
142 Infection of the Eye from Vaccination Pustule. (Om Vaccin eruptioner i ögat) E Kuhlefelt

No 6, pp 663 792

143 Treatment of Spontaneous Pneumothorax without Complications T W Tallqvist
144 Anatomy of Spondylolisthetic Pelvis (Spondylolistetiskt backen, beskrifvet anatomiskt) O Engström
145 Study of Tuberculosis in Island District (Tuberkulös infektion och tuberkulös sjukdom bland befolkningen i en österbottnisk kustsocken) K v Kraemer
146 Myomas Preventing Delivery, Two Cases (Till förlossnings er apien vid uterusmyom) T Länsimäki

137 **Syphilis Affecting the Nervous System**—Hagelstam reviews his experiences with 50 cases of tabes, 7 of syphilitic myelomeningitis, 93 of cerebrospinal syphilis and 13 of paralytic dementia He made a special study of the reactions of the cerebrospinal fluid and tabulates the findings in a later series of 34 cases Treatment was with mercurial inunctions and potassium iodid Only within the last few years was salvarsan added One fatality under salvarsan was observed, an undiagnosed tumor (gumma?) in the frontal lobe having undergone rapid hemorrhagic degeneration under the influence of the salvarsan with fatal results The symptoms in this man of 30 had suggested beginning tabes with some intercurrent febrile infection, possibly influenza As a supplement to the usual mercurial treatment he was given an infusion of 0 45 gm neosalvarsan and six days later another He seemed to be entirely restored but two days later died in a sudden convulsion, explained by the blood found in the frontal lobe in the debris of a tumor as large as a hen's egg

139 **Pylorospasm in Infants**—Lovegren reports two cases and Pipping six Lovegren's two cases were in boys and the spasm developed during the fifth week One child was kept at the breast, watching to see that no more milk was taken at a time than the stomach could bear The other child was fed with breast milk drawn artificially and given both by the mouth and rectum The advantages of the 25 or 30 c c of breast milk instilled into the rectum six times a day were plainly obvious The child was also given 5 gm of veal bouillon before each meal Under these conservative measures alone the children did not lose much in weight and by the third month were thriving normally The fatal one in Pipping's six cases was the only girl The spasm came on either immediately after birth, the third or fourth day, or the second, third or fourth week In one case the spasm began with melena and in two cases there was bile in the vomit One of the children lost 35 per cent of his weight Only one of the children was given breast milk alone The aim was to give the food in small amounts and with as little fluid as possible On the whole his experience speaks in favor of internal treatment alone

Hospitalstidende, Copenhagen

Dec 22 1915 LVIII No 51 pp 1303 1326

147 Basophil Stippling of Red Blood Corpuscles in Various Forms of Anemia (Basofil Punktering af de røde Blodlegemer ved fors kellige Former af Anæmi) V F Møller Commenced in No 50
148 *Tests of the Cerebrospinal Fluid in Syphilis (Undersøgelse over Lymphocytose, Hyperalbuminose og Wassermann s Reaktion i Cerebrospinalvædsken ved Syphilis) C With Commenced in No 49

148 **Tests of the Cerebrospinal Fluid in Syphilis**—The details are tabulated here from 144 cases of syphilis in its various phases, progressive paralysis and "nerve syphilis" They show that the cerebrospinal fluid may present the Wassermann reaction, increased albumin content or lymphocytosis at any stage of syphilis These abnormal findings in the cerebrospinal fluid are particularly frequent and pronounced with untreated leukoderma With never found the cell content increased in cases of simple tumors in the central nervous system, but the albumin content was often high The preceding instalments were summarized in these columns January 29, p 392.

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DEVELOPMENT OF A FIFTH YEAR IN MEDICAL EDUCATION IN THE UNITED STATES*

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NEW YORK

The old proprietary medical school in this country taught medicine very badly as viewed by modern standards There was no attempt even to demonstrate the foundation sciences in laboratories, which, except for the dissecting room and the study of necropsy material, scarcely existed Chemistry and physiology were taught only in lecture rooms, while bacteriology and pharmacology had not even been discovered That physicians and surgeons of any ability were trained at all was due entirely to the presence on the teaching faculties of great personalities who, by their precept and their example, dominated the fields of clinical medicine and clinical surgery Those early schools taught the theory and the practice of medical and surgical art well, so far as they could be taught in the lecture room and at the bedside in hospital wards A fixed and graded course of instruction of three years' duration was generally adopted about 1886, coincident with the development and addition of laboratories of instruction in the basal sciences of physiology, bacteriology, histology, physiologic chemistry and pharmacology The course was increased to four years in most schools in the early nineties, at which time the great modern development in the specialties of medicine was added to the curriculum Strange as it may seem, the chief objectives of a medical education, general medicine and general surgery, remained nearly stationary, so far as methods and time allotted to them are concerned, until they came to represent a minor portion of the curriculum in most medical schools

About five years ago many schools began to realize this abnormal condition, and in order to return to the more normal conditions existing before the invention of surgical specialties, these fundamental clinical subjects were placed again in a proper relation to the rest of the work of medical education In conjunction with this reform a more intimate relationship with the general wards of the hospitals has been added to the medical curriculum, and the system of clinical clerkships based on the English plan has been developed in many schools It is not fair to criticize the amount of time devoted in the present four year course to either the basal laboratory sciences or to the various specialties of medicine or to the fundamental clinical branches, while the total time needed to fulfil the requirements established by the universities and in some states by the medical practice acts demands of medical students a greater amount of time than it is possible for them to devote to their education without incurring a really measurable menace to their health The requirement of 4,000 hours of classroom work, divided into four annual courses of thirty weeks each, amounts to more than six hours a day In some universities the requirement exceeds this minimum, which has been fixed by the laws of several states If the content of the science of medicine requires such a devoted apprenticeship from its followers, it is fair to conclude, therefore, that the four year course has become inadequate to meet the demands for a curriculum which shall teach medicine adequately on modern lines

Medical education has reached this stage of its development under the influence of several governing agencies The medical schools themselves have come largely under university control, and these schools of high grade have been the most potent factor in improving medical education, both by raising the preliminary standards and by improving the methods of instruction and the facilities for education within the schools themselves A second factor of equal importance and of the greatest possible importance in reducing the number of the low-grade schools which have existed in the United States has been the Council on Medical Education of the American Medical Association, under the leadership of its chairman, Dr Arthur Dean Bevan This body has held annual conventions during the past eleven years, and has been the most active agent in the elimination of low-grade schools, and in the struggle for higher standards in medical education The work of this council was ably seconded by the report of the Carnegie Foundation for the Improvement of Teaching, issued in 1911 The third factor for the improvement of medical education has been found in the state boards of licensure

The work of these three bodies has usually been in harmony, but the most recent development would seem to indicate that the state boards were pulling somewhat apart from the schools, and from the general profession as represented by the Council on Medical Education There seems to have arisen a sort of rivalry between various state examining boards to place their particular states on a somewhat higher plane of education and requirement for licensure than is the practice in other states As long as the state legislatures followed the lead of the Council on Medical Education and prescribed the methods of examination and qualifications of preliminary education, no special harm was done, but when various states began to prescribe the curriculum that should be taught in the universities, their action gave rise to endless difficulty, and they were usurping functions which might more properly have been left to the universities The recognition of the inadequacy of the present four year curriculum to give a competent medical education without detriment to the health of the medical student is primarily a university and not a state matter Nevertheless, various state legislatures have empowered their boards of medical examiners to correct this error in modern medical education by prescribing a year's hospital practice on the house staff of some approved hospital as a prerequisite for admission to licensure examinations By this action these states have removed a year of necessary training from the control of the schools of medicine and placed it in the hands of the hospital boards, which, in the past, have been more concerned with the care of their patients than with developing the educational opportunities that are inherent in every hospital service It would seem to be an amusing paradox, if it were not really a serious matter, that any state should require a year's practice of a prospective physician before admitting that physician to an examination to test his fitness to perform the work of administering to patients in medicine and surgery Several universities have followed blindly the state examining boards in requiring a year's practice in some recognized hospital as a prerequisite to receiving their degree of M D It would seem that this action in acccepting a year's work without university control other than a more or less thorough examination of the hospitals involved is a bad educational procedure

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The necessity for adding a fifth year to the present four year medical course is undoubtedly granted by all students of medical education, but such a year when added should remain under university control and should result in a relief to the crowding of the present curriculum The student in his added fifth year should receive under the supervision of university officials the equivalent of the last of the two years of a hospital internship as at present administered, and not merely the ordinary first year as now made up, in most hospitals, entirely of laboratory and subordinate work without responsibility This fifth year should give the student of medicine, in addition to a year of clinical work and training in hospital practice, an extension of his opportunity for training both in the laboratory subjects in the first years of his course and also in the specialties of medicine during the second two years Finally, and of great importance, this proposed extension of time in the curriculum should secure to the student a certain amount of leisure during his whole course in medical education to be devoted to reading outside of the regular curriculum The recent graduate in medicine should receive in a properly organized five year course of study an opportunity to assimilate a broad view of the whole field of the practice of medicine

The organization of a proper fifth year should not be left to the control of state boards and hospital authorities Under such a system the hospital intern never has received and will not receive an experience proportionate to the amount of time expended in a year's service It is not possible at present for a state board to have any but a perfunctory control over the managers of privately endowed hospitals, and there do not exist at the present time a sufficient number of state and municipal hospitals to care for the annual additions to the number of medical graduates The present system of graded intern service controlled by a rotating visiting service has resulted in a tradition that the intern house officer is the head of his wards and has prevented the development of a system of continuous influence because controlled by the rotating visiting physicians and surgeons The limit in time of service both for the intern and for the attending staffs has failed to build up any permanent organization It is a notorious fact that during the first of the usual two year service as a hospital intern the recent graduate gives to the institution much more than he receives except in the very best organized hospitals During this year, under the present arrangement, the intern does a maximum amount of drudgery in the laboratory in return for a minimum amount of instruction and experience He accomplishes really no advanced work in the diagnostic and therapeutic study of disease This part of his hospital course is secured by him as an intern only during the last half of an eighteen or twenty-four months' service The exceptional hospitals to which this criticism does not apply are those institutions which are connected either directly or indirectly with medical colleges, and in whose wards active clinical teaching is carried on

It is not possible that any state classification of hospitals based on the number of beds, laboratory facilities, library plant and similar criteria will ever be able to hold the management of an institution in the first rank of educational progress unless there is instilled through the whole institution that spirit of scientific thought and study which can come only from a daily accountability to a group of eager students It follows, therefore, that the hospitals which are most completely under university control will offer the best service for medical and surgical interns, and it is an equally logical conclusion that if the training and work of the hospital intern himself is to be used as a means of education, that work from beginning to end must be also under university control

The educational advantages which will follow from the addition of a properly organized fifth year will consist of an opportunity to remove from the first two years of the medical course all clinical work and to permit the student during those two years to devote himself to a laboratory training and theoretical study of the fundamental sciences which underly medicine Only in this way can the student secure a sufficient time to learn the necessary parts of those fundamental sciences which have so enormously increased during the past ten years

A second advantage to be secured is the opportunity for extending the time to be devoted to training in medical specialties Even in a five year course, however, no attempt should be made to do more than give the graduate in medicine a knowledge of the principal pathologic conditions which occur in the organs of special sense and in the special functions which are grouped under the heading of medical specialties He should be trained to recognize the normal condition of those special organs and systems and to recognize variations from the condition of health In no sense should the attempt be made to make the recent graduate of medicine a thoroughly trained man in any single one of the specialties of medicine The time to be devoted to the student's training in special clinical subjects should be limited to a necessary proportion of the third and fourth years of the curriculum

The third advantage to be secured will be the devotion of parts of his second and third year to mastering all the methods of diagnosis which are applicable to the study of the problems of surgery and internal medicine in order that finally in his fifth year, under proper instruction and oversight, he may devote his whole time to clinical work in the hospital wards devoted to these two great branches of medicine, which must in the last analysis prove the lifework of the vast majority of medical men

In developing this fifth year it is important that time should be saved the student throughout the whole course for leisure in which to devote himself to collateral reading on the special clinical cases and the scientific facts which come within his daily observation In order to carry out such an organization, it is necessary to reorganize the great majority of American hospitals The old time rotating service for the attending staff, which has begun to disappear, must be abolished entirely If the hospital is large enough it is better to place two men in continuous charge of half as many beds than to allow these two men to alternate on twice the number for periods of service of six months each The single-headed continuous service is absolutely essential in any hospital in which a consistent system of education is to be developed The second change consists in abolishing the old American ideal of a rotating house staff service in either three or four grades each of four to six months' duration during a period of from sixteen to twenty-four months In place of this there must be established a resident intern staff who shall hold their positions at the pleasure of their superior medical officers for indeterminate periods Between the head of such a service and his resident staff officers there should be appointed a sufficient number of associates and assistants, who should also be on continuous service except for absences due to necessary vacations

Finally, there should be added to the resident staff a number of fifth year medical students as clinical clerks The work of these clinical clerks should be carefully supervised by the resident staff and assistant attending physicians, and should form an integral part of the hospital routine The clinical clerks should not be an extra burden to the service, but their work should count as a necessary part of the routine work If possible, these student clerks should reside in the hospital, and should be subject, of course, to all the rules of hospital discipline The term of service for such student interns cannot be organized on the usual college year of eight months' duration and four months' vacation On the contrary, the term must be a full year of twelve months without vacation During such a fifth year the individual student should have his service so divided that he would spend one third of it on internal medicine, one third of it on general surgery and one third which might be divided in similar ward work on such medical specialties as diseases of children and neurology, and on the surgical specialties of gynecology and urology

The organization of hospitals which might be utilized for this sort of educational work is of two kinds Either they are directly owned and controlled by the universities themselves, which at the present time is unusual, or, if they are classified as extramural hospitals, the control of the personnel of the attending and resident staff and control of the wards for teaching purposes should lie absolutely within the power of the university One of the great problems which is being solved in several ways by the universities of the United States is the bringing of the many well-organized and well-endowed private hospitals of the country under the control of these educational bodies A beginning has been made in many places, but the relation of some of the best medical schools of the country to the hospitals in which they now enjoy their teaching facilities in clinical branches still leaves something to be desired so far as permanency and completeness of organization are concerned

Probably in no such case has the perfect plan been formulated as yet The ideal arrangement that the university shall own and operate its own hospitals demands too great an endowment to warrant any attempt for a general adoption New funds are needed by every university today to improve both the educational and the research features of the scientific as well as the clinical departments of its school of medicine And it would seem too great a task to add to the search for these funds at the same time an endeavor to secure a plant and sufficient endowment to provide hospital facilities while in every university town there already exists one or more hospitals which are well supported and in which medical education has been neglected by precept and tradition for many years That the universities need these unused educational opportunities belonging to their neighbor, the hospitals, is perhaps self-evident It ought to be equally appreciated that the hospitals need in their services the scientifically trained teachers of the university to serve them as physicians and surgeons This fact is evident to all concerned in the management of those hospitals which have made proper alliances with university schools of medicine, to the trustees, to the lay officials and the trained nurses, to the general public, and last and really the most enthusiastic of all, to the patients in the wards The question to be decided in each locality is, Can the local hospitals, which are already in existence, be utilized in medical education to the same advantage as would result from the building and ownership of a hospital by the university? The answer is, Yes, provided the control of the medical appointments and the organization of medical education in the hospital rest absolutely in the universities

Two problems are presented to any university which wishes to form an alliance with an existing hospital first to educate the hospital trustees that medical education will benefit the hospital and that the patients will be better cared for by university control of the wards than by any other system, that the hospital, in other words, needs for its development the service of university professors, of the many assistant teachers, of the medical students, and also needs for its patients the access to the college laboratories When this has been accomplished the second problem will be met in the need for formulating a contract of alliance between the two corporations, university and hospital This has never been done twice in exactly the same way, and in this paper an attempt has been made to indicate the objectives for which both institutions should work It is fully believed that there exists no antagonism in the aims of both, but that the real interests of the two are identical When such an organization as is here outlined has been accomplished, the course in medicine given in American universities will be second to none in point of completeness and thoroughness of execution as compared with that of any other country The excellent work in the teaching of the laboratory branches which has already been developed to so high a plane will then be equaled by the clinical teaching in the practical hospital branches, and American medicine shall have been placed on a higher plane than ever before

130 East Thirty-Fifth Street

MEDICAL EDUCATION IN THE UNITED STATES*

J M BALDY, MD

PHILADELPHIA

With the publication of annual reports on medical education, commenced in The Journal in 1901 by the American Medical Association, began the history of real medical education in the United States The following year the work was taken up formally and continued by a committee on medical education of the Association, which committee was later merged into the present Council on Medical Education The continuing and progressive work of this council, supplemented in 1910 by the publication of the Carnegie Foundation, gave an enormous impetus to the movement Like publicity in all other matters, these publications, which exposed to the public and to the medical profession alike the miserable pretenses which existed, caused the beginning of what might be called modern medical education in this country Five years prior to this time the Council on Medical Education of the American Medical Association had taken up the subject of existing low standards, and had been making a valiant fight for improvement The Carnegie Foundation publication came very opportunely to the rescue of the Council's efforts, and gave such an impetus by its pitiless exposure that in the intervening period such a change had taken place as is almost marvelous, which, had it been predicted, would have been considered the fancies of a madman

The final standards in the United States are hardly yet established, the future is being trusted to for much In this country of state's rights, things do not progress evenly and the progress of medical education is no exception But this may be said, that the revolution has progressed so far as to assure the future absolutely and that within a comparatively short period

Behind the movement stands first and foremost the Council on Medical Education of the American Medical Association But even this body has not been able to live up to its announced standards on account of the inequality already referred to Certain sections of the country constantly are found unable to travel the pace, and have lagged behind until finally the Council has adopted as its standard policy to go only just so fast as the slowest might be able to follow Of course this does not mean that the sluggard is allowed to dictate how fast its pace shall be, but practically its sluggish movements have had a measurably potent influence on the pace In the main the Council's work has been so well done that it would seem to be hypercritical to question its wisdom in modifying its decisions Possibly also in the long run those who have been and are dissatisfied with some of its actions will admit in their final judgment that it has acted wisely And yet it would seem in some essential instances that it might have "stuck more closely to its guns" Nothing is ever builded for permanency without a sure and solid foundation, and nothing in the way of technical education can be builded soundly without the foundation of preliminary requirements A weakness at this point is a weakness along the whole line, and where advance could be made rapidly at various points, a weakness in this element impairs the finishing of the whole superstructure

On paper the medical standards of education in the United States at the present day are a preliminary education of a satisfactorily completed four years' high school course plus a year of college work in chemistry, physics, biology and a modern language, to be followed by a four year graded medical course, the first two years of which are devoted to the laboratory subjects and the second two years to the clinical features, and then a year's practical training as an intern in a hospital This standard, which is the "ideal standard" of the Council, is in process of attainment, and the signs of the times indicate that it surely will be reached When once attained, this standard will be the equivalent of and equal to that of any country on the face of the earth One cannot make a systematized comparison between the medical standards of the various countries because of the fact that they differ in essentials in many respects For instance, the German standard is founded largely on the laboratory, the English standard is founded largely on the hospital, and it will be seen that the standard of the United States is one which attempts to select the good from both of these standards — that is, the laboratory and the hospital are duly and equally emphasized

How far, then, has this country been able to attain that which is its ideal? It is hardly just to judge the standard of a country by the standards attained in certain sections But, on the other hand, it is unfair not to bring in sharp relief the fact that certain sections have measurably approached the more nearly ideal than has the country at large This is more true of this country than of any other, as has already been pointed out, because of our multiple standards of control, due to state rights The fact that certain sections of the country have approached more closely to the ideal and are well on the way to the completion of that approach is sufficient evidence that in time all the country will be on the same footing In studying the situation as it exists today, it is just, therefore, that that portion of the country which is most advanced in these matters be taken as the basis of discussion, consequently I will use the state of Pennsylvania as a peg on which to hang my comments

As has been stated, the real foundation, without which no superstructure can stand, is the preliminary requirement Under the yielding and leadership of the Council on Medical Education of the American Medical Association, this foundation has been and is weakened Whatever may be the excuse, the facts remain the same, and until the day comes that this Association insists that all subterfuges and all evasions be done away with, the superstructure cannot be finished The reasons given for allowing the student to enter the medical school with conditions in his preliminary work may be basically sound, but the fact remains that it has so weakened the superstructure that it has made it exceedingly difficult for those states wishing and endeavoring to live up strictly to the announced preliminary to hold their course I myself am strongly of the opinion that the allowance of conditions at the present stage of development is entirely unnecessary and uncalled for and is holding back the desired end, not only the length of time that these conditions are being allowed but many years in addition The Pennsylvania medical schools have been in no better condition to enforce preliminary requirements, if one is to accept as true the report of the Carnegie Foundation, than are those in many other sections of the country And yet Pennsylvania has been able for the past two years to enforce strictly the fulfilling of the preliminary requirement No school in that state allows of conditions to the applicant entering the medical school, and this in spite of the allowance made by the Council of the American Medical Association, which conditions are so widely taken advantage of by many schools

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* Read before the Section on Education of the Second Pan American Scientific Congress, Washington, D C, Dec 29, 1915

The constant result of the inequality as established by this Council is that applicants are rejected on account of deficiency by Pennsylvania schools and immediately cross the border into a neighboring state and are admitted to schools which are just as well and better able to stand the financial loss It has been contended and it is true, as has been demonstrated by the Pennsylvania schools, that a strict enforcement of the preliminary requirements has caused a loss to the class of two thirds or more of its personnel But, on the other hand, it has been equally demonstrated that this loss is a mere temporary one and that the reaction begins immediately The second class following the strict enforcement of the preliminary shows not only a marked increase but an increase fully equivalent to one half or more of the previous loss, and thereafter there is a steady and healthy increase, as far as numbers are concerned I am not pretending that Pennsylvania is the only state having schools enforcing the proper standard I am merely using it as illustrative of what is true of all of the better colleges in the country which are enforcing their requirements strictly, irrespective of irregular standards encouraged and allowed by the Council of the American Medical Association However, the Council has promised that in 1917 these allowances shall cease Therefore it is in sight that as far as preliminary requirements are concerned, this country will be fully up to its ideal standard Of course this will mean the elimination of a few more of the medical schools already in the field The actual shrinkage in the number of schools began in 1907, following the presentation of the first classification of medical colleges by the Council on Medical Education of the American Medical Association, and the movement for betterment since then has been continuous This shrinkage has been going on more or less rapidly — certainly steadily — ever since, and there are possibly fifteen or twenty schools today in existence which will not be in existence at the end of the next five years Whether it is possible or not that the leniency displayed by the Council on Medical Education has saved thus far some of the existing schools, the more important question involved by its action is, whether these schools were worth saving and whether they will not finally succumb

Presumably a knowledge of the branches removed from the medical curriculum and injected into the preliminary course are basically necessary to a full appreciation of the branches retained in the medical curriculum itself This is one view of the desirability and necessity of an advanced preliminary education in medical matters The other view on this matter is well maintained by President Lowell of Harvard University in a paper read before the Tenth Annual Conference of the Council on Medical Education This view embraces the cultural idea of the college work rather than the utilitarian These two views diametrically opposed to each other have largely been straddled by the Council in its efforts to satisfy everybody Certainly one in administering these affairs cannot act in a dual capacity administration must be based on either one view or the other if it is to be successful "Culture" in education is like a great many other words — widely used but with no common basic understanding as to what it means Certain it is that culture can be derived from college studies of a scientific character just as well as it can from general college topics, and the man who cannot acquire culture in his scientific work will be unable to acquire culture in his classical work To draw such a line of distinction is absurd The practical point involved is, Is a man who is looking forward to devoting his coming studies to a technical subject to give an undue amount of time to purely so-called culture and to neglect deliberately in the acquiring of that culture those branches which are basically necessary to his understanding of his future technical work?

Pennsylvania has decided in the negative in this matter The state law requires a year of college work, specifying the minimum amount not only the minimum amount of work but also the minimum number of subjects which may be included, namely, physics, chemistry and biology The schools of Pennsylvania, advancing one step further than the state, require in addition a modern language A number of Pennsylvania schools have themselves increased these requirements to two years of college work, but these two years must include the amount of science specified in the state law It may be that a man is unable to acquire the amount of culture in college work of this type that would be acquired by him were he to omit this amount of science and substitute for it the ordinary college branches as laid down in the curriculum of the literary colleges I myself not only doubt this but also do not believe it In any event, if he does lose a bit of culture, he has attained so much more basic knowledge of that which is necessary for his understanding of his future studies that he will run away with the college man not having had the opportunity to take this science work Pennsylvania, therefore, administers on the supposition of the science work as essential and that culture will follow as a matter of course, with an equivalent length of time I am well aware of the fact that this is flying in the face of the opinion of many of the educators of the country, but nevertheless I am perfectly confident that time will prove the correctness of this decision

The medical curriculum, being freed from the basic sciences, has been able to adjust itself to a definite standard This standard has been evolved by the adaptation of parts of both the German and the English systems It has been believed by medical educators in the United States that neither of these systems is adapted to our native soil, however much they may be so to the soil of the parent country The first two years of the curriculum have been devoted to that portion on which the German school is based, namely, the laboratories The final two years of the medical course have been given over to that portion which is especially emphasized by the English system—bedside instruction The curriculum throughout the whole country is largely standardized today and there is very little difference in the work done in the different schools of better class those schools which are likely to live It has been fully recognized, however, that four years is all too short a time for any candidate to learn much more than the facts of modern medicine, and that in the final two years it is impossible to give a sufficiency of practical application of the facts of medicine to round out the candidate's knowledge Consequently the Council on Medical Education in its ideal standard advised a year's practical training as intern in a hospital

The hospital year is intended to be a year in which the student begins independently, or rather with competent aid, to apply the facts of medicine which he has learned in the schools during his four years of medical study A division of opinion exists as to whether this year should be obtained prior to issuing the medical degree or after the medical degree has been issued by the college and prior to the student entering the state examination An effort has been made to develop the work of this year from both points of view, but it is almost inevitable that failure will attend that effort which goes in the direction of the intern year prior to graduation Again state rights very materially enter into this subject In a country like Germany where paternalism obtains and hospitals are largely if not entirely under government control, such a system is possible In the United States where few hospitals are owned by the state and few medical schools are state institutions, it would seem to be an almost impossible task The University of Minnesota is making an effort to solve the problem in this way, but is having very considerable difficulty, and there is a prospect that they may fail, although the university is the only medical school in the state of Minnesota Pennsylvania has adopted the policy of providing an internship after graduation but prior to the entrance to the state examination The act of assembly amending the medical act of 1913 requires that

> Every candidate for admission to the Pennsylvania state medical examination shall have completed a year as intern in a hospital which shall have at least twenty-five beds to each intern, devoted to the treatment of medical, surgical, gynecological and special diseases, shall maintain or establish cooperation with a maternity department or hospital in which each intern shall have not less than six weeks' service or the equivalent thereof, during which time he shall have attended or participated in the attendance upon not less than six confinements, shall maintain a thoroughly equipped modern pathological and clinical laboratory proportionate to the necessities of the hospital, the records on file of the cases treated in said hospitals shall give evidence of the laboratory work so done by the intern, shall maintain a department of anesthesia consisting of one or more anesthetists who shall have supervision over all the anesthesia given in the institution and whose duty it will be to instruct the intern in the administration of anesthetics

Many difficulties have arisen in the enforcement of this provision of the medical act, and although the requirements went into effect the first day of January, 1914, the work is as yet uncompleted On investigation of the hospitals of the state, both those owned by the state and those owned by private corporations, many were found not to measure up to the standard written into the law Laboratories, anesthetic departments and maternity departments were found wanting in a surprisingly large portion of the hospitals On first investigation the Bureau of Medical Education and Licensure, which was made responsible for the administration of the act, was unable tentatively to approve more than a hundred out of about 200 institutions in the state A year's trial of these institutions has developed many points of interest as well as of difficulty It was found that there was a considerable reluctance by hospitals to raise and expend funds for the establishment of the laboratories and other required departments, in consequence of which a rider was attached to each hospital appropriation by the legislature of 1915 to the effect that laboratories and anesthetic departments must be established in the institution to which the appropriation was made, and the approval of these departments was placed in the hands of the Bureau of Medical Education and Licensure With the original requirements in the amendment of 1913 and the requirements of the recent appropriation acts, the Bureau of Medical Education and Licensure has found the solution of the difficulties which presented themselves It is now in process of inspecting all the hospitals, carefully going over with them the facilities they possess and indicating to them the necessary improvements and additions The readjustment to the new order of things is being rapidly made, and it may confidently be predicted that within the next year every hospital in Pennsylvania which shall stand approved by the medical authorities for internship will possess a proper and sufficient equipment and personnel with which to give the intern a proper fifth year of medical study

With the completion of this movement there will be established in that state finally and definitely the ideal standard set in 1914 as the essential standard by the Council on Medical Education, namely, a satisfactorily completed four years' high school course plus a year of college work of college grade in physics, chemistry and biology and a modern language to be obtained prior to entrance on medical study, to be followed by the satisfactory completion of a graded four years' medical course in an approved medical school, this to be followed by a year's service as intern in an approved hospital In addition to this, attention may be directed to the fact that already three of the seven schools of the state, following the example of other first-class schools of the country, are requiring a preliminary two years of college work instead of one such year

As the preliminaries are the necessary basis of the medical curriculum, just so is the internship the basis of future practice The graduated student passing from the medical school into the wards of the hospital begins in a measure for the first time to apply on his own responsibility the facts of medicine which he has previously gathered These facts he now begins to learn to correlate, and without competent systematic correlation his facts will be of little use to him in the future This year is or should be an actual year of instruction It is not sufficient that the intern be allowed to practice on the patients in the wards, but all his methods and actions should be carefully overlooked and carefully guided and his mistakes pointed out to him and corrected Without this, half or more of the value of the internship would be lost Consequently the hospital which the intern enters should be an approved one This inevitably leads to the necessity that medical authorities inspect and carry out supervision of hospitals The necessity for this is unquestioned The method of obtaining the power to accomplish the result is open to administrators to find In Pennsylvania this has been accomplished, and the work of approving the hospitals for internship is well under way The medical act specifically requires an internship, stating that it shall be in an approved hospital, and at the same time specifically stating certain departments which must exist During the 1915 session of the legislature, the appropriation bills to hospitals required that several of these departments, including the pathologic departments, which in many institutions were wofully deficient and in some altogether absent, be established, and the funds were provided therefor A tentative list of hospitals in the state has been established and approved for internship, largely on the reports from the hospitals themselves as to what advantages they offer In the meantime the Bureau of Medical Education and Licensure has undertaken a thorough investigation of each individual hospital in order that it might satisfy itself as to the true situation as to the competency of the institution for the purposes proposed All institutions found deficient are notified as to their deficiencies and advised as to how to go about rectifying them As soon as the work of the bureau is completed, a new list of approved hospitals in Pennsylvania will be published, and thereafter no internship will be accepted excepting from these approved institutions It will be seen, therefore, that Pennsylvania is a pioneer in the requirement of the internship and also is showing the way to bring effectively the hospitals into line for the purpose intended, namely, a competent course of a year of practical instruction for the medical student prior to allowing him to enter on the practice of medicine

Hospitals vary as to the length of their internship, some having twelve months, some eighteen months and a few two years The interns have their choice of any hospital on the approved list, but having once entered on the service of that institution, are held to the full term of internship, be it twelve months or be it twenty-four months, before he is admitted to the state examinations

To assume that this internship simply means a year of education for the intern himself would show an exceedingly narrow view of the importance of the whole movement The Bureau of Medical Education and Licensure, during the process of its inspections, has found to be a fact that which it had long since suspected, namely, that many men of the medical and surgical staffs of the institutions are incompetent to fill their positions, using the hospitals largely for their own private purposes and in no way attempting to give a competent return to the institution, to its patients or to the public for the opportunities they themselves are receiving The bureau has found laboratories existing in institutions of from seventy-five to a hundred beds, which laboratory had existed for some years On investigation it was found that there had been during the past year several hundred examinations, largely of urine and blood, made in these departments The year following the agitation started by the state medical authorities demanding that the pathologic departments be properly equipped and properly run, the examinations in these departments were found to have increased to several thousands The conclusions are inevitable that the men on the staff of these particular institutions had never, before being faced with the necessity to do so, made even a respectable effort toward fulfilling their duties to the hospital and its patients

It is easy to foresee with our experience in Pennsylvania at this time that the sum total of the efforts of the state in this respect will be not only the education of the intern, but also a most potent factor in the education of the staff members themselves These men, who were either too lazy or indifferent or ignorant in the past, will be, by publicity, spurred to the necessity of the use of the laboratories The men with a desire and ability to use the laboratory will be given wider opportunities on account of the increased facilities and the competency of the laboratory work, one of the main features being demanded is a competent laboratory personnel The sum total is bound to be the elevation of the whole tone of the service of the hospital and of every man connected with the service It will also tend by comparison to improve the unfit, and will give boards of managers in the future opportunities to know who are unfit by observing the use they make of the laboratory

Nor will the movement end at this point As the men of the hospital staff use more and more freely the opportunities placed at their command, they will realize more and more the advantages modern medicine can offer from the diagnostic and prognostic standpoints Through properly equipped and properly manned laboratories their patients will soon acquire a knowledge of the efficiency of such service and will demand it of other physicians practicing in the community The practitioners in the community, having their patients going to the institution and seeing the exact methods the technician applies and realizing their value, will demand their use more and more thereafter Those on the outside who are too slothful or too ignorant will be shortly marked as unfit by the community itself

It will be seen, therefore, that through a properly organized system of control of hospital facilities, not only is the intern educated to such a point that there will be a minimum of unfit practitioners in the state in future, but the hospital staff is equally benefited, and the intelligence of the community itself will be educated to such a point that it will be able to distinguish the fit from the unfit The benefits of the internship are limitless, and it is our belief in Pennsylvania that it is equally potent with the establishment of proper preliminaries in the bringing of the medical profession of this country out of the low state into which it had fallen

If all this be true, then it would seem that it would take a powerful hand not only to get control of the reform but also to carry it out Is it conceivable that any individual agency, such, for instance, as a medical school, can accomplish this as quickly and as effectively as can the state itself? We are strongly of the opinion from our experience that the state and not the college is the proper authority to take in hand the question of internship The authority of the college is limited and cannot spread equally wide and with equal potency as can that of the state

It may be said, then, with truth, that the ideal standard as proposed by the Council on Medical Education of the American Medical Association has been reached in this country, and it is only a question of time until the whole country will have landed on the same platform With a standard of preliminary education requiring four years' high school work and one year of college work, including the necessary basic sciences, a graded four year medical course and a period of internship, can it longer be said that there is any other country which exceeds the United States in its efficiency in medical teaching?

2219 De Lancey Street

CANCER OF THE BREAST

FIGURES WHICH SHOW THAT EDUCATION CAN INCREASE THE NUMBER OF CURES *

JOSEPH C BLOODGOOD, M D
BALTIMORE

I have had the impression, especially during the past five years, that the relative proportion of benign lesions of the breast is steadily changing, and that the percentage of benign lesions is on the increase This change was associated with a shorter duration of the disease, that is, women were seeking advice earlier I did not realize, however, or even dare hope that this fortunate change would be as great as it proved to be

December 12, the figures were completed in a study of 1,577 cases recorded in the Surgical Pathological Laboratory of the Johns Hopkins Hospital Further investigation may change these figures slightly, but the evidence is sufficient to justify a preliminary report now, because, it seems to me, it is the most favorable and encouraging evidence that we have up to date—so favorable, that it seems almost just to state that education of women and of the profession can cure cancer of the breast

From 1889 to 1900, the percentage of benign lesions was 32, from 1900 to 1910, 41, from 1910 to 1913 it was 47, and from 1913 to 1915, 59, or from 1910 to 1915, 54 Therefore, in about six years as compared with the previous ten, the percentage has increased from 41 to 54 (13 per cent) But in the past three years it has increased 12 per cent over the previous three years

In this group of benign lesions only definite, undoubted cases are placed There is no question as to the diagnosis Further investigation will probably add to the number of benign lesions not subjected to operation It is difficult to obtain the records of these cases into the Surgical Pathological Laboratory In my own practice I have found, since these figures were completed, almost a dozen cases of the different types of benign lesions in which operation has not been performed, the records of which did not reach the laboratory It is also quite possible that in some cases of inoperable cancer the records have not reached the laboratory But I am quite certain that these additional cases will not affect the results as given, except to show more improvement Inoperable cases are distinctly on the decrease, in spite of the fact that radium has brought to Baltimore a number of inoperable cases of cancer of the breast the records of which have probably not reached the laboratory These patients would probably have died at home

Another impression has been confirmed by this recent compilation Adenocarcinoma and cancer with areas of adenocarcinoma are distinctly on the increase, but only certain types—those which develop with a short duration of the disease Adenocarcinoma which develops in preexisting tumors of one or more years' duration have distinctly decreased since 1910, and especially since 1913, while the benign tumors in which they may develop have increased

The percentage of adenocarcinomas from 1889 to 1900 was 10, while since 1913 it has increased to 22 per cent Fully developed cancer of the breast has decreased from 90 per cent during the years 1889 to 1900, to 78 per cent since 1913

Up to 1910 we had recorded eleven cases of *benign cystic adenoma*, and nine cases of *cancer in cystic adenoma* Since 1910 we had thirteen examples of the benign adenoma, and only one of the malignant There is apparently only one reason for this remarkable change—if women with cystic adenoma seek advice early after the appearance of the tumor, the surgeon will find an encapsulated benign adenoma, and the patient will be protected from cancer by the removal of only the tumor If they delay, cancer may develop

Cancer cyst—relatively rare malignant lesion of the breast—is apparently disappearing We have recorded sixteen cases up to 1910, and only two cases since then

Why is it that galactoceles, which up to 1910 were a very rare observation—two cases—have become quite frequent since 1910—eleven cases, seven of which have been observed since 1913? Is galactocele a lesion which has a tendency for spontaneous disappearance, or does it develop later into cancer, and when it has developed into cancer, are we unable to recognize the preexisting lesion? There seems no question that galactoceles are on the increase

I have just called attention to the fact that benign cystic adenomas are on the increase and malignant cystic adenomas on the decrease This is also true of the papillomatous cysts—tumors in which apparently cancer develops late Up to 1910 there were twenty-one benign papillomatous cysts, since 1910, twenty-three Of the malignant papillomatous cysts there is a distinct decrease previous to 1910, eighteen cases, since 1910, only six cases

Colloid cancer is also apparently on the decrease previous to 1910 we had fourteen cases, since 1910 only five cases The decrease here, however, is so slight that it may have no significance, and as yet we do not know the benign prototype of this malignant adenoma

Adenocarcinoma of the duct-cancer type is on the increase previous to 1910 we had sixteen cases, since 1910, seven cases I am inclined to the opinion that this duct cancer, when it has been present some time, changes to a medullary carcinoma

The type of adenocarcinoma in which there is the greatest increase is that which may develop in the so-called chronic cystic mastitis of the adenocystic type previous to 1910, eleven cases, since 1910, fifteen cases

Adenocarcinoma with areas of fully developed cancer is distinctly on the increase, especially since 1913 I am inclined to feel that this also is an indication of an early cancerous tumor There seems no doubt that adenocarcinoma of certain types is increasing, and mixed adenocarcinoma and cancer, while the fully developed cancers of the scirrhous, medullary and cancer-cyst type are on the decrease

Chronic mastitis not associated with lactation appearing as a somewhat circumscribed tumor shows a marked increase in the first twenty years there were only eleven cases, while during the last six years we had fourteen cases, twelve of which have been observed since 1913

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* Preliminary report, from address delivered before the Western Surgical Association, Des Moines, Iowa, Dec 18, 1915

The only way I can explain this remarkable development is that a certain type of scirrhous tumor characterized by being circumscribed shows a greater decrease than any other form of malignant tumor

Chronic cystic mastitis with the development of large simple cysts shows a great increase in the first twenty years, ninety-five cases, in the past six years, eighty-five cases, of which forty-nine have been observed since 1913

My evidence seems to show that chronic cystic mastitis with large cysts has a tendency to disappear spontaneously, so that if women delay, we will see this cyst less frequently If they seek advice at once after the appearance of the tumor, the number of cases will increase, as shown by our figures Previous to 1910 we have records of five disappearing tumors, since 1910, of none, that is, as we have explored such tumors, none were given an opportunity to disappear Among 178 cases of chronic cystic mastitis with large cysts, we have records of sixteen disappearing tumors, most of these in the remaining breast from which we had removed a cyst

The benign form of chronic cystic mastitis without large cysts, the adenocystic type, is distinctly on the increase twenty cases in the first twenty years, and thirty-three cases in the past six years, of which twenty-four have been observed since 1913 This adenocystic type of chronic cystic mastitis has been described by Schimmelbusch, Reclus and others, and all the observers state that in about 50 per cent of the cases the lesion is malignant Up to the present time we have had fifty-three examples of the benign type and twenty-six cases of the malignant, that is, the malignant are a little less than 50 per cent Since 1913 the percentage of the malignant has decreased from 50 to about 30 We have here evidence, therefore, that cancer in the adenocystic type of chronic cystic mastitis is an early form of cancer But if these patients submit to operation at an earlier period, the probabilities are that we shall not find cancer, and the percentage of cures will increase from 90 to 100

These 1,577 cases are now being tabulated according to the duration of the disease, and the evidence so far shows that patients since 1910, and especially since 1913, are seeking advice much earlier In each case we are trying to investigate the educational factor

We have this evidence, which clearly shows that women are understanding the information and that the educational propaganda is so far a success

However, when women come at this earlier period, in which a clinical diagnosis can rarely be made, the surgeon's difficulties increase In the first place, in a smaller group, operation is not indicated, and we must learn not to remove breasts unnecessarily In the second place, when operation is indicated, the diagnosis must be made at the exploratory incision from the gross appearance of the local area, or from the frozen section, and in many cases this is by no means a simple procedure The probabilities are that no well-trained surgeon will ever fail to recognize the fully developed cancer, or the distinctly benign, encapsulated tumor But if women come early, we shall find that the borderline group is large, and the difficulties of the surgeon will increase On the one hand, he will wish to avoid the complete operation for cancer when the lesion is benign, and the almost fatal mistake of the incomplete operation when the lesion is malignant It seems to be agreed that if there is any doubt, the complete operation for cancer should be done

I have submitted over sixty borderline cases to a number of pathologists, and have found that in not a single one has there been a uniform agreement as to whether the lesion was benign or malignant I have selected these lesions from among my cases which I have called benign fibro-adenoma, cystic adenoma, and benign papillomatous cysts, chronic cystic mastitis with and without large cysts, and the types of early adenocarcinoma in chronic cystic mastitis, in cystic adenoma and in papillomatous cysts If I took one group of pathologists I could report them all as malignant, and another group would allow me to report them as benign This is no reflection on the diagnostic abilities of the pathologists it is simply evidence that at the present time there are certain lesions of the breast about which we apparently do not agree from the microscopic appearance only I shall consider this phase of the subject in a second paper

Women will be warned that there is some trouble in the breast by pain, lump, discharge from the nipple, retraction of the nipple, eczema and ulcer about the nipple, dimpling of the skin, and the presence of lumps in the axilla If they come under the observation of a surgeon within a few days, the differential diagnosis, clinically, at the exploratory incision and from the frozen section offers difficulties which at present we do not seem to be able to overcome in the sense of exact diagnosis It is my opinion, however, that when every case is carefully investigated, the mistake of an incomplete operation for cancer should never be committed, but the mistake of performing the radical operation for a benign lesion will occur in from 10 to 20 per cent of the cases This is a mistake that must be made until we have developed a method of more exact diagnosis

I am quite certain that when women understand the situation, they will prefer the slightly mutilating operation to the danger of an incomplete removal of a malignant tumor

904 North Charles Street.

A STUDY OF THE BACTERIOLOGY OF CHRONIC PROSTATITIS AND SPERMATOCYSTITIS

WITH SPECIAL REFERENCE TO THEIR RELATIONSHIP TO ARTHRITIS *

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It is now widely believed that chronic foci of infection may cause metastases, with resulting disease, in various organs of the body There is considerable experimental and clinical evidence on which to base this belief The work of Billings[1] and Rosenow especially has demonstrated the relationship between chronic focal infections and chronic arthritis and nephritis, and suggests that cardiovascular changes, myositis and neuritis may also be caused by similar foci, which have usually been located in the head

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* Because of lack of space this article is abbreviated in The Journal by omission of Table 1 The complete article appears in the author's reprints a copy of which will be sent by the author on request, accompanied by stamped self addressed envelope

[1] Billings Frank Chronic Focal Infection as a Causative Factor in Chronic Arthritis The Journal A M A. Sept. 13, 1913 p 819 Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis Arch. Int. Med, April 1912 p 484

That the prostate and seminal vesicles may be the seat of such foci is presumptive, but other foci (the head especially) must be carefully eliminated or considered before such a diagnosis can be made However, since many arthritides have been cured or improved, or the process stopped by draining a focus in one or both seminal vesicles, as demonstrated by Fuller,[2] Squier,[3] Young[4] and Barney,[5] it seems reasonable to believe that the seminal vesicles in many instances contain the foci of infection which are wholly or partially instrumental in the production of arthritis

In this study of the bacteriology of chronic prostatitis and spermatocystitis, material was examined from patients suffering from one or both of these conditions together with subacute or chronic arthritis The anaerobic flora and a study of the specificity of the isolated organisms are of special interest in this work

In a study of the bacteriology of the prostatic and seminal vesicle contents, the technic employed in securing the material must be carefully considered before the value of the work can be estimated It has long been believed that the anterior urethra normally contains many micro-organisms, and that the posterior urethra is sterile Pfeiffer[6] considers these organisms saprophytes under normal conditions, as they have failed to give immunity reactions with the patient's serum Stanziale,[7] with a specially constructed instrument, found that the anterior third of the anterior urethra (especially the fossa navicularis) always contained some micro-organisms, and that the middle third often contained similar organisms, while the posterior third rarely contained any Jungano,[8] in a study of the bacteriology of the normal anterior urethra, found two anaerobic cocci and four different anaerobic bacilli, as well as all the commonly described aerobic organisms

A carefully controlled technic was used by Young, Geraghty and Stevens[9] in the bacteriologic examination of nineteen instances of chronic prostatitis, but aerobic blood agar plates were used exclusively Of the nineteen patients examined, from only eight were micro-organisms grown *Staphylococcus albus* three times, streptococcus twice, slender unidentified bacillus twice, and two other unidentified organisms Young, Geraghty and Stevens concluded that bacteria are less frequently present in chronic prostatitis at the time the patients appear for treatment than is generally believed None of their patients had had a urethral discharge within three months In every instance there was clinical evidence of chronic prostatitis, and pus was present in the secretion at the time of examination However, the failure to isolate micro-organisms in a single examination of seminal and prostatic fluid is no proof of the absence of infection, as noted by Young, Geraghty and Stevens and several others, notably Notthaft,[10] who found that as many as fifteen massage treatments on definitely pathologic prostates might be necessary before the infectious nature of the disease could be demonstrated

Cohn,[11] in 1898, did the first work on the bacteriology of chronic prostatitis, using a technic very similar to that used by Young, Geraghty and Stevens, however, he did not reirrigate after the endoscope was passed He studied twelve patients with chronic prostatitis, all of whom had had gonorrheal urethritis He isolated micro-organisms from each, using aerobic ascitic agar plates, obtaining *Staphylococcus albus* eleven times, streptococcus three times, *Bacillus coli* once, an unidentified colon-like bacillus once, and a gram-positive diplococcus twice Three healthy prostates yielded sterile plates

With a similar technic, Hitchins and Brown,[12] using ascitic agar plates and ascitic bouillon, studied forty-six examples of definite prostatitis and obtained somewhat different results, namely, *Staphylococcus aureus* eleven times, *Staphylococcus albus* twenty-four times, a nonliquefying coccus thirty times, streptococcus twenty-seven times, diphtheroid bacillus thirty-one times, *Bacillus coli* twice, and the gonococcus five times They do not state from how many patients they failed to grow organisms, or how many times each patient was examined, other than to state that some of the examinations were repeated

Evidence of a different sort, contradictory to the notion that the gonococcus is the exciting organism in most instances of prostatitis and seminal vesiculitis, is furnished by the statistics of Young, Geraghty and Stevens, who classified 358 examples of chronic prostatitis, finding only 73 per cent with a history of gonorrhea, of those examined bacteriologically, no gonococci were found Squier,[13] in his work on seminal vesiculitis, suggests that the diversity of results from bacteriologic examinations will allow of but two conclusions (*a*) "With the exception of acute suppurative conditions, the gonococcus is regularly absent" (*b*) "There is an almost constant growth of pyogenic organisms" He also suggests that in some instances the gonococcus within the vesicles may undergo a mutation due to change in environment Using the material secured by his operation of seminal vesiculotomy, he found staphylococcus five times, streptococcus once and an unidentified gram-positive coccus twice Other organisms were seen in some of the smears, but were not found on culture How the cultures were made is not stated

The work of Notthaft[10] is interesting in this connection, but the results are not conclusive, as he used a noncontrolled technic, and made his diagnosis of gonococci by smear and not by culture He studied 120 cases of chronic prostatitis, all with gonorrhea from six months to thirty years before, with the following results Those in the second half year following gonorrhea showed gonococci in 73 per cent, those in the third half year, 50 per cent, those in the fourth half year, 15 per cent, while in those in the third year, no gonococci were found, as early as the second half year other organisms were found, and in the fourth half year none gave gonococci alone

There are many scattered references in the literature of bacteriologic work done, as well as vaccine therapy applied in the treatment of chronic prostatitis and spermatocystitis, but the technic is either not given or not controlled In general the organisms isolated are the same as those already mentioned

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[2] Fuller Medical Rec, New York, October, 1909, p 717, ibid, 1912, lxxxi, 1125, ibid, 1904, lvi, 807, Ann Surg, 1905, xli, 903

[3] Squier Cleveland Med Jour, 1913, xii, 801, New York Med Jour, 1915, ci, 333

[4] Young, H H The Role of the Prostate and Seminal Vesicles in General Toxemias, The Journal A M A, Sept 13, 1913, p 822

[5] Barney Boston Med and Surg Jour, 1914, clxxi, 59

[6] Pfeiffer Wien klin Wchnschr, 1903, xvi, 762

[7] Stanziale Centralbl f Bakteriol, 1906, xlii, 19, 108, 209, 309

[8] Jungano La flore de l'appareil urinaire, Paris, 1908

[9] Young, Geraghty and Stevens Johns Hopkins Hosp Rep, 1906, xiii, 271

[10] Notthaft Arch f Dermat u Syph, 1904, lxx, 277

[11] Cohn Centralbl f d Krankh d Harn u Sex Org, 1898 p 229

[12] Hitchins and Brown Am Jour Pub Health, 1913, iii, 889

[13] Squier New York Med Jour, 1915, ci, 333

The only reference I have found to anaerobic organisms isolated from a prostate or seminal vesicles is in the work of Albarran and Cottet,[14] who isolated a very virulent anaerobic bacillus, the *Bacillus perfringens*, from a prostatic abscess, in a patient with prostatic stone with infection the presence of an unidentified anaerobic bacillus was constantly demonstrated That anaerobes as well as aerobes may be present in diseased conditions of the prostate and seminal vesicles is to be expected, because of the anatomic structure of these parts and the constant presence of such organisms in the anterior urethra, as well as the possibility of invasion by contiguity and through the blood stream

In my series of thirty-four patients, the examinations did not include those with a urethral discharge within six weeks, most of them had had none for several months or years, or none at all In each patient there was clinical evidence of prostatitis or seminal vesiculitis, as manifested by a change in size, or an irregularity in contour and consistence of the prostate or vesicles, and their contents contained pus at the time of the examination No attempt was made to secure the contents of the prostate or vesicles separately

Several methods of obtaining the material from the patient were tried, healthy prostates and vesicles being used as controls Sterile fluids were obtained from these patients most constantly when no irrigation from the outside was employed, and the following technic was finally adopted

Each patient is given hexamethylenamin and acid sodium phosphate, 15 grains each, three times daily for two or three days before collecting the material At this time the penis, especially the glans and meatus, is thoroughly washed with soap and water and allowed to dry, after which the glans is painted with half strength tincture of iodin, and with a small applicator the fossa navicularis is swabbed out thoroughly with the same solution This rarely causes more than a slight smarting sensation, either at the time of the application or when urine is first passed, nothing more permanent has been noticed after its use in a large number of patients Most of the patients mention no discomfort whatsoever The patient then passes his urine, having been previously instructed to have a partially filled bladder at this time

When the anterior urethra has been flushed and treated in this manner, the most infectious part (fossa navicularis) has yielded sterile plates on several examinations, as demonstrated by carefully inserting a platinum loop to the bottom of the fossa and applying it directly to the culture medium

The prostate and seminal vesicles are then stripped, the patient being in a standing bent over position A sterile wide mouth bottle catches the fluid as it drops from the meatus Sufficient vesicular fluid can be obtained for culture even when the urinary bladder is empty, but, of course, the vesicles can be more thoroughly emptied when the bladder is distended

As soon as possible a drop of the fluid thus obtained was placed on the following mediums aerobic and anaerobic blood agar slants, ascites glucose agar shake cultures, and ascitic bouillon and blood agar plates These were incubated at 37 C and examined at the end of each twenty-four hours until twelve days had elapsed

Twelve patients with no history of genito-urinary infection or symptoms pertaining to the genito-urinary tract, and clinically having normal prostates and seminal vesicles, were used as controls, and yielded no growth on any of the mediums, some of them repeatedly

Material was examined from thirty-four patients, twenty-six with associated subacute or chronic arthritis Care was taken not to examine patients with other definite foci of infection, but in a general charity hospital it is often impossible to rule out the teeth as a possible source, so in many instances doubtful cases had to be used, as noted in Table 1

Eighty-five per cent of these patients gave histories of one or more specific urethral infections Eighteen, or 52 per cent, had no symptoms referable to the genito-urinary tract, while some of the others dated their present troubles back months or years to the time of an acute specific urethritis, and at the time of the examination had symptoms pertaining to the genito-urinary apparatus

Of the thirty-four patients studied, organisms were recovered from only twenty-four (70 per cent) However, none of the remaining ten (30 per cent) were examined more than three times As mentioned elsewhere, Notthaft considers repeated massage and culture necessary before the infectious nature of some of these processes can be proved Should these apparently noninfectious conditions be repeatedly examined, some may present their infectious nature eventually Several in this series that yielded organisms at first gave sterile fluids, at least on one examination This is explained on the grounds of deep glandular infection, which appears in the secretion only after repeated massage Table 1 shows that twelve different organisms were isolated from twenty-four patients, as summarized in Table 2

TABLE 2—ORGANISMS ISOLATED FROM TWENTY FOUR PATIENTS IN TABLE 1

Organisms	Alone	With Other Organisms
Staphylococcus albus	4	5
Anaerobic staphylococcus	1	
Streptococcus haemolyticus	3	1
Anaerobic streptococcus	1	1
Gonococcus	3	1
Diphtheroid bacillus	3	
Micrococcus tetragenus	0	1
Colonlike bacillus	0	1
Bacillus proteus	0	2
Micrococcus catarrhalis	0	1
Unidentified gram negative anaerobic coccus	1	0
Unidentified gram negative diplococcus	0	1

As noted in Table 1, the examinations were repeated in many patients, and the organisms isolated were the same in each instance, with the exception of Patients 4 and 22 These patients on their third examination gave only one of the two organisms appearing in the first two examinations

Anaerobic organisms were isolated from four different patients These were all cocci, and from three of the four patients they were repeatedly isolated, three grew alone and one with another organism They all grow slowly, rarely appearing before three or four days, although each one gives an aerobic growth, it is very scant, and appears only after many days' incubation (from six to seven) As these organisms were transplanted they became more and more aerobic, growing at first only in the lower inch of an ascitic agar shake, but when continually transplanted, their growth came up to within one-half inch of the top, never, however, reaching the surface

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[14] Albarran and Cottet Presse med 1903 xi 85

No relationship was noted between any one organism and any particular group of symptoms The local symptoms were mostly those due to bladder irritability, such as frequent and imperative urination, and less commonly perineal pain, painful ejaculation and intermittent urethral discharge

An attempt was made to ascertain by different immunologic reactions whether or not the patients reacted in any measure to the infections they bore, and this was carried out with twelve of the twenty-four patients in whom such infections were demonstrated These tests, like other phases of the investigation, were controlled Table 3 explains the results of the reactions tried

The skin tests were all made with a heavy suspension (500 million to 1 c c) of killed organisms, controlled with salt solution and a suspension of other organisms The organism being tested was also tried on a normal individual Should there be hyperemia and swelling about the test marks, and no very noticeable change about either control, the reaction was called positive, provided the organism did not cause a similar reaction in a normal individual These tests as well as the agglutination tests were all made before any injections of killed organisms had taken place

The agglutination tests were macroscopic No test was considered negative until the mixture was incubated at 37 C for two hours and then on ice for twenty-four hours Controls were run with normal serum

The opsonic determinations were made in the usual way with washed leukocytes, patient's and control inactivated serums, and a suspension of the organisms Determinations were made at the beginning and after the patient had received three or four injections of killed organisms

When injections were given subcutaneously to the patient, a similar injection was given some other patient of the series A local reaction was called positive only when the patient showed more hyperemia, swelling and tenderness than the control, who showed no reaction whatsoever in many instances For instance, Patient 17, when injected with his own organisms, had a severe local reaction characterized by a wide zone of hyperemia, swelling and tenderness, which came on in ten hours after the injection, and lasted thirty-six hours At about the same time he had a distinct chill, followed by a fever of 100 2 F , headache and general malaise Associated with these he experienced very severe pains in all joints that had been involved in the process He also developed a temporary urethral discharge, something that he had not had for months Patient 9, when injected with his own organisms, gave a similar picture, but when Patient 17 received organisms from Patient 9, and vice versa, there was no reaction whatsoever, excepting some hyperemia about the point of injection in Patient 9

In a similar way focal reactions are recorded positive and are manifested by pain usually, and swelling sometimes, about the affected joints, associated with this there may be a lighting up of a urethral discharge, or some noticeable change in urination, such as frequency, urgency, pain and strangury

The painful sensations of these joints are more marked in subacute than in chronic conditions in which marked bone changes have already taken place They are constant and throbbing, usually lasting about twenty-four hours, but may be very mild, for example one patient, No 24, remarked that following each injection he had a peculiar feeling of formication within his knee joint, which constantly reminded him of his affected part Associated with this peculiar sensation within his knee, an effusion invariably occurred within the bursa of the popliteus muscle, and remained for about twenty-four hours Injections of other organisms did not cause the sensation or the effusion

The general reactions were very variable, but usually consisted of a slight chilly sensation followed by fever around 100 F , together with headache, malaise and loss of appetite

After the size of the dose had been regulated, the greatest reactions came with the first dose, especially so with focal reactions An increase in the dose, however, would keep the reactions constant The rule seems to be in these few patients, that the earlier a reaction appears the more severe it is apt to be For instance, a number of patients (Nos 17, 9, 12, 13 and 15) gave marked reactions, and in each instance these appeared within twelve hours following injection Late reactions may appear after twenty-four hours, but they are mild and not specific

The skin and agglutination reactions are difficult to interpret with the organisms used here, but in a few instances, as noted in Table 3, definite reactions were obtained, which can be accounted for only by the presence of antibodies for the infecting organism The fact that the opsonic index was raised from normal or below in many instances is only incidental in the course of inoculations, and has no bearing on the specificity of the organisms, as it is well known that the opsonic content of a serum for any given organism can be raised by the injection of the killed homologous organisms, whether or not the individual has been infected with them

The reactions following the inoculations of killed organisms, however, seem to be very noticeably specific In no instance was a focal reaction caused by an injection of any but the killed infecting organism, while in eight of the twelve tried, when their own organisms were used, there were very noticeable focal reactions, two gave doubtful reactions, while two gave no noticeable reactions on repeated injections With but three exceptions (Patients 8, 22 and 6), all the organisms are relatively avirulent for laboratory animals Very large doses were given intravenously to rabbits and intraperitoneally to guinea-pigs, with the exceptions noted, none of the organisms caused more than a temporary effect[15]

The original purpose of the injections was to study the reactions if any resulted, but since some of the patients showed such improvement in symptoms after injection, an attempt was made to follow systematically through the cultures with the treatment No control patients were used The difference in chronicity and response to treatment of any two patients is so variable that the efficacy of control patients would be slight The treatment was irregular in some instances, but an aim was made to give one vesicular and prostatic massage weekly, together with an injection of killed organisms and tonics, etc , as indicated The reacting dose varies somewhat, but is usually large Five hundred million was usually the lowest reacting dose, and this dose was the one usually used, although a billion has often been given to secure the proper reaction Six injections were given as a rule, but some patients received only four

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[15] This work is to be carried out more fully with varying and repeated doses to ascertain the possibility of any elective tissue affinity for these organisms

Five of the twelve cases studied gave negative cultures and a great improvement or complete disappearance of all symptoms in from six weeks to three months (average, ten weeks) Six of the seven others still have positive cultures after from one to five months' observation, but five of them have marked improvement in their joints and general condition The feeling of relief that these patients experience about their affected joints after a good focal reaction is often marked, although it is usually more or less temporary in nature However, once a good focal reaction is obtained, the severity of the joint symptoms seems to be permanently decreased to quite a noticeable, but variable, degree

SUMMARY

Anaerobic as well as aerobic organisms may be the exciting cause of chronic prostatitis and spermatocystitis One sixth of this series yielded anaerobic organisms This may help explain some of the many sterile cultures obtained when only aerobic mediums are used, as well as the inability to grow organisms seen on a smear

The organisms isolated, in 66 per cent of the patients tested, seem to be specific for the infected individual This is shown by the positive reactions following the injection of the autogenous organisms, as compared with the negative reactions obtained with similar injections of other organisms of the same or different groups

Many instances of prostatitis and seminal vesiculitis are apparently noninfectious on a single examination, but repeated examinations often reveal the infecting organism

Chronic infections of the prostate and seminal vesicles seem to be partially or wholly responsible for many instances of subacute and chronic arthritis The specific focal reactions obtained speak strongly in this direction

Drainage of the focus of infection in the prostate or vesicles, by expression or otherwise, together with the raising of the antibody content of the patient's blood by inoculations of killed organisms, is apparently advantageous in the treatment of these conditions

508 Honore Street.

Infant Mortality—The last issue for 1915 of the *Bulletin of the Chicago School of Sanitary Instruction* gives tabulated figures of the mortality of infants under 2 years of age, according to causes, for the year 1914 Under 1 year the chief causes of deaths in the order of their importance as shown by these figures were diarrheal diseases, congenital defects and accidents, impure air diseases, acute contagious diseases, venereal diseases, tuberculosis, diseases of the nervous system, rickets, erysipelas, violence, diseases of the urinary system and diseases of the heart and blood vessels In the second year impure air was found to assume first place as a cause of death, with diarrheal diseases second, followed by acute contagious diseases Congenital defects dropped from second place to ninth place in the second year There were 6,888 deaths in the first year of life, which constitute 20.2 per cent of the deaths at all ages The second year deaths were 1,432 or 4.2 per cent. of the deaths at all ages The causes of deaths from diarrheal diseases in the first and second years of life occurred in the closely crowded wards, where people live under insanitary conditions, and the figures seem to bear out the estimate that 70 per cent. of infantile deaths during the first two years of life are preventable.

THROMBOPLASTIN (TISSUE EXTRACT) AS A HEMOSTATIC

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One of the divisions of the Bureau of Child Hygiene is the Division of Children's Clinics The clinics have an eye, nose and throat and dental service, and in five of the clinics, hospital facilities are offered for operations on children with abnormal growth of lymphoid tissue in the tonsils and nasopharynx The clinics have been operated since March, 1912 The total capacity of tuberculosis clinics for operative cases is forty-two cases a day

Operations were performed three times a week in each clinic at first, and for the past year they have been carried out daily Under the earlier plan the children were received in the early afternoon of the day preceding operation, and received general and gastro-intestinal care during the afternoon and evening Temperatures, physical examinations and urine analyses were made before operation The operations were performed between 9 and 10 a m The children, if well, are discharged on the morning of the third day

Under the daily plan, the children are received on the day of the operation at 7 a m, and the usual preoperative care is given Children are not operated on until three hours after their arrival at the clinic

The operations are performed with the Mackenzie tonsillotome and Frothingham adenoid curet The operators are selected from the ranks of medical inspectors, and only those who have had sufficient nose and throat training are assigned to the position of nose and throat surgeon Operations are performed while the patient is under full but not profound anesthesia

The operations have been standardized in each clinic, and only the accepted method is allowed to be used

Normal horse serum treatment was used both in prophylactic and in a curative way for about six months to prevent hemorrhage Children over 12 years of age, with the type of tonsil which we found by experience to be followed by excessive bleeding, received 10 c c of normal horse serum subcutaneously about one hour previous to the operation When bleeding continued unduly, that is, about fifteen minutes subsequent to the operation, repeated injections of 10 c c of normal horse serum were given hourly In some cases as much as 40 c c of this serum was injected before bleeding ceased, and in others even this amount failed to control the hemorrhage While no bad symptoms occurred as a result of anaphylaxis, yet there were a number of patients who complained of bone pains, fever and skin eruptions Emetin hydrochlorid was used, but no good effects were observed as a result of this treatment

In October, 1914, Dr T Joseph Barry and I devised a combination operation It consisted of the use of the tonsillotome and cold wire snare The snare (Hooper's) is prepared in the usual way, the tonsillotome is slipped through the loop The tonsillotome is made very dull The tonsil is separated by pressure with the tonsillotome and engaged in the eye of the tonsillotome secundum artem The snare wire is slipped over the tonsillotome blade and engaged on the tonsil by about three or four half twists of the ratchet This snare is left in place in the mouth while another snare is similarly placed over the other tonsil After the second tonsil is engaged, the first tonsil is caught by forceps and the snare wire drawn home and tonsil removed The second tonsil is similarly removed This tourniquet operation greatly reduced the amount of tonsillar hemorrhage The capillary oozing from the nasopharynx, however, continued to be a serious matter The snare operation plus the calcium and the serum treatment made a picture entirely different from that under the previous method of operating There was too great loss of blood, however, and oozing continued too long in many cases

It was at this period that an article by Dr Alfred F Hess came to my notice[1] It seemed that it would be ideal if after the removal of the tonsil, the denuded area could be pressed with a mop soaked in a hemostatic solution and the bleeding controlled at once A few days later thromboplastin[2] provided by the Research Laboratory of the Department of Health was used at the Throop Avenue Clinic The tonsils were thoroughly removed and a pledget of gauze saturated with this preparation was immediately applied to the cut surface, it was likewise applied in the nasopharynx immediately following the removal of the adenoids The results were striking The patients showed only a little bloody saliva after being put to bed Healing was expedited, and many patients were entirely well at the end of four days

As a result of this initial favorable experience, the routine use of thromboplastin was extended to all the department of health nose and throat clinics Recently, in order to obtain an opinion as to the results obtained, a questionnaire was circulated to the registrars of these clinics A summary of their reports is given in the accompanying table A review of this table, which comprises a summary of 2,036 adenoid and tonsil operations and embraces the reports of various observers, seems convincing as to the value of thromboplastin in this connection

SUMMARY OF 2 036 THROAT OPERATIONS IN WHICH THROMBOPLASTIN WAS USED

Questions	Results at Clinics				
	Pleasant Avenue	East 169th Street	Throop Avenue	Lawrence Street	Herkimer Street
When did you begin its use?	June 22, 1915	June 7, 1915	June, 1915	June 1, 1915	1st week of July, 1915
No of cases in which thromboplastin was employed?	507	395	389	404	341
Results as regards post operative hemorrhage?	No bleeding	No bleeding	Very little bleeding	Very slight bleeding	No bleeding
Do the children vomit blood as frequently?	No	No	No	No	No
Do they have bloody stools as frequently?	No	No	No	No	No
What is the general condition of the child?	Very good	Good	Good	Good	Nearly normal

I may add, in conclusion, that not in a single instance has the operator or nurse been compelled to return to the clinic to care for a bleeder after operation since the use of thromboplastin was made a routine procedure We now feel that in case a hemorrhage did occur, any trained nurse could apply the hemostatic while awaiting the arrival of the medical inspector Although thromboplastin solution is used liberally in the throat, and no doubt some of it is swallowed, there has not been any case of illness resulting Thromboplastin is safe, effective and easily applied

317 West Fifty-Fifth Street.

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[1] Hess, A F Tissue Extract as a Hemostatic, The Journal A M A, April 24, 1915, p 1395

[2] The preparation of thromboplastin is simple and inexpensive Dr Hess describes its preparation as follows Ox brains are obtained fresh from the slaughter house, stripped of their membranes, washed in running water, and weighed They are then passed through a meat chopping machine three times, and an equal amount of normal salt solution is added This suspension is allowed to remain in the refrigerator for forty eight hours, and it is then twice pressed through cheese cloth This extract, which contains fine suspension of tissue in addition to tissue juice, is diluted with one half its quantity of salt solution Tricresol is then added in proper proportion so that the finished preparation contains 0 3 per cent Aerobic and anaerobic cultures of this fluid have repeatedly been found sterile It maintains its hemostatic potency for many months

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EPIDEMIC CEREBROSPINAL MENINGITIS DEVELOPING TWENTY-TWO HOURS AFTER ABDOMINAL OPERATION

REPORT OF A CASE

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History—Oct 5, 1915, I was requested by Dr Charles M Remsen of Atlanta to see with him a patient, a married woman of 30, on whom, the previous day, he had performed an abdominal operation The reason for the consultation was that the patient had suddenly had a general convulsion twenty-two hours after the operation, and was in a state of profound unconsciousness

The patient had been under Dr Remsen's observation for a year prior to operation, and had been put into good condition to undergo the procedure Furthermore, she was in the hospital for eight days before the operation was performed During this period her pulse and temperature were constantly normal, she was not exposed to any known infection, she occupied a private room, and spent a good deal of time on the roof in the open air In short, everything possible was done to forestall complications, and to promote the best possible conditions

At 6 o'clock on the morning of operation, the temperature was 97 4, the pulse 78, and the respirations 20 The patient had slept well, and appeared to Dr Remsen to be in excellent condition for undergoing her ordeal The operation was done at 11 30 a m, the work consuming a little over an hour When the patient was returned to bed the pulse was 132, but she slowly reacted, and by 6 o'clock in the evening the pulse was 112 At 9 p m, the pulse was 110, the temperature 98 3 The patient vomited a number of times, but her general condition appeared entirely satisfactory She passed an uncomfortable night, though she slept at intervals At 9 30 a m, October 5, the temperature was 98 2, pulse 88, respirations 22 At 11 45 a m, she had a general epileptiform convulsion lasting ten minutes There were no prodromes The seizure appeared out of an almost cloudless sky She did not regain consciousness after the convulsion, but remained profoundly comatose At 12 40 p m, a second convulsion appeared, similar to the first, but not lasting so long At this time, when I first saw her, physical examination revealed nothing save that the patient lay in coma, and that there was frequent muscular twitching in various parts of the body, especially in the hands Heart, lungs and abdomen showed nothing unusual At this time there were no Kernig's sign, no abnormal ocular manifestations, and no evidences of renal disturbance.

There was no stiffness or retraction of the neck At 3 p m the temperature was 98 3, pulse 98, respirations 24 Chloral and bromids controlled the convulsions, which did not again recur During the ensuing night, a number of times death seemed imminent The pulse began to show the most startling changes, varying in a few moments from 84 to 140 The respirations, likewise, became very irregular, varying from 28 to 10 per minute, and for several hours became extremely shallow, and sighing in character Apparently, the patient was kept alive only by the administration frequently of the most rapidly diffusible stimulants

At 9 30 a m, October 6, lumbar puncture was done, and 10 c c. of slightly turbid spinal fluid withdrawn Immediate microscopic examination revealed a small number of extracellular meningococci Thirty c c. antimeningococcic serum (Flexner) were at once administered, intradurally In an hour the pulse fell from 140 to 114, and during the subsequent illness never again went higher than 120 The patient's general condition began to improve at once. At 8 p m, the same day, a second dose of 25 c c. of serum was given October 7, at 10 a m, 25 more c.c. of serum were administered The spinal fluid was now more turbid, but showed fewer organisms The patient's pulse now ranged from 102 to 110, and temperature from 99 to 102 in an irregular fashion

Kernig's sign was now present, as well as transient external strabismus The patient was still in profound coma At 7 p m October 7, a fourth dose of 30 c.c. of serum was given The fifth dose of serum, 30 c.c., was given at 10 a m, October 8 Following this dose the patient roused from coma sufficiently to swallow a few drams of water, but was speechless and oblivious to her surroundings At 9 p m, October 8, the sixth dose of 30 c.c. of serum was given, and at 6 p m, October 9, the seventh and final dose of 25 c.c., making a total of 125 c.c. of serum administered during four days After the last dose of serum, the improvement was marked The patient was able to swallow an ounce of milk every hour, and gave other evidences of slowly returning consciousness Improvement gradually continued By October 13 the patient could speak an occasional word, and the restlessness of the few preceding days following the deep coma began to abate At this time the temperature ranged from 99 4 to 100 1, and the pulse from 86 to 104

It is perhaps pertinent to mention that, October 6, the second day of the meningitis, when the patient was turned on her side, there was a discharge of 3 or 4 drams of purulent material from one nostril It is possible that this represented the source of infection and that following the inhalation of the anesthetic, the organisms found their way through the cribriform plate.

The temperature touched normal first on the fifteenth day of the disease. The patient at this time was occasionally quite restless, still mentally dazed, and able to articulate very slowly a few words By the nineteenth day all symptoms of the disease had disappeared except the mental dulness, moderate frontal headache and great deliberateness in speech—a veritable groping for words It might be noted here that the abdominal wound showed no intention of healing until the complete subsidence of the meningitis

By November 10 the patient was able to take a few steps with assistance. At this time the speech was normal, the memory regained, and except for transient emotional disturbances and general weakness, there were no symptoms November 14 the patient was discharged from the hospital in excellent condition, though rather weak. At present she is restored to her usual health, entirely free from complications or sequelae of meningitis

COMMENT

The interesting features of this case are

1 The occurrence of cerebrospinal meningitis as an operative complication, appearing suddenly, without the slightest warning

2 The entire absence of the physical signs of meningitis for twenty-four hours after the initial convulsion There were no Kernig's sign, no ocular manifestations, no retraction of the head or stiffness of the neck, no prodromal headache, no disturbances of temperature until eight hours after the initial convulsion, and none of pulse or respiration until twelve hours after the initial convulsion In short, the only symptoms for a number of hours were convulsions, muscular twitching and coma—symptoms common to not a few pathologic processes Diagnosis was made as the result of lumbar puncture

3 The probability that meningococci were present in the purulent material in the nasal passages, and the interesting and insoluble problem as to whether or not the anesthetic had anything to do with the passage of organisms into the meninges (mechanical factors, lowered resistance)

4 The nonunion of the operative wound until after the complete subsidence of the meningitis

5 The remarkable curative effect of the Flexner serum given persistently, in a case in which, for a number of hours prior to the first dose, the patient appeared moribund

1023 Empire Building

EXPERIENCES WITH THE KIUTSI-MALONE URINARY TEST FOR PREGNANCY *

IRVING S CUTTER, M D
AND
MAX MORSE, Ph D
OMAHA

This paper concerns an empiric study of the method for the determination of pregnancy by utilizing the urinary enzyme called forth by the development of the placenta as outlined by Malone [1]

In the first place, it is possible to urge the following general criticisms against the method

1 It has been quite conclusively shown by qualitative methods in the hands of Peiper,[2] Plaut,[3] Jobling and Petersen,[4] and others, that the enzyme occurring in the blood, which Abderhalden utilized as a test for pregnancy by the color reaction with ninhydrin, when applied to the dialysate from a digest of blood containing this enzyme and the specific substrate placenta, is not a specific one, and quantitative methods by Van Slyke[5] have demonstrated this to be true to a degree beyond question

2 Two sources exist for the appearance of proteolytic enzymes in normal urine, namely, excreted enzymes from the subject, and, secondly, those due to the presence of certain bacteria Since the earlier work of Matthes,[6] several investigators[7] have estimated the efficiency of the pepsinlike enzyme occurring in urine Being pepsinlike in nature, it gives, as end-products, biuret positive compounds of the character of peptones Under certain conditions, such as after a meal high in proteins, and especially where there is tendency to excretion of large volume, the enzyme appears in a quantity well able to account for the anomalous results which we have experienced and which will be given in detail later With regard to the matter of bacteria, our own results show conclusively the danger from this source

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* From the Department of Biochemistry University of Nebraska College of Medicine.

[1] Malone, R. H The Diagnosis of Pregnancy A Simple Method Based on the Presence of Specific Enzymes in the Urine, THE JOURNAL A. M A. May 15 1915 p 1651

[2] Peiper A Deutsch med. Wchnschr 1914 xl 1467

[3] Plaut, F Munchen med Wchnschr 1914 lxi 238

[4] Jobling and Petersen (for literature) see Bull. Johns Hopkins Hosp 1915 xxvi 356

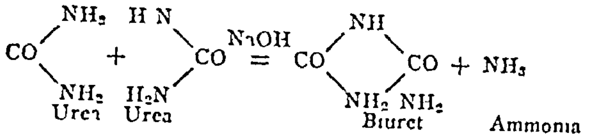
[5] Van Slyke, D D Jour Biol Chem, 1915 xxiii 377

[6] Matthes M Arch f exper Path u. Pharmakol 1903, xlix, 107

[7] Wilenko G Berl klin Wchnschr 1908 xlv, 1060 Ellinger and Scholz Deutsch Arch f klin Med 1910 xcix 221 Benfey A. Biochem Ztschr 1908 x 458

3 Malone's method is based on the biuret reaction, and it must be obvious to one familiar with clinical diagnosis that the typical color reaction called for by the method in question, that is, the peptone color, would be identified only with difficulty in the highly colored medium of the urine, even if some of the urinary pigments be removed by adsorption with animal charcoal, colloidal iron, etc, as we have been able to do, or with kaolin, as Malone suggests We have encountered faint positives which, unless one were constantly working with the test, one would undoubtedly fail to discover as positive

In the second place, the use of the alkaline ingredient of the biuret reaction is conducive to the conversion of some of the urea into the substance biuret by the elimination of a molecule of ammonia



$$\mathrm{CO(NH_2)_2 + (H_2N)_2CO \overset{NaOH}{=} NH_2CO\,NH\,CONH_2 + NH_3}$$

In an alkaline urine this may be demonstrated in vitro without introduced reagent

4 The method of removing biuret positive compounds by adsorption on a mechanical shaker may prejudice the results in that it is our experience that the shaking with kaolin for five minutes of a biuret positive urine will so affect the color reaction after digestion and filtration that it is materially weakened, and in the case of a weak, positive reaction, such as one encounters at times, it is conceivable that the diagnosis would be rendered negative

Aside, now, from these general considerations, we may say that we have obtained negative results when pregnancy has been present, that we have obtained one positive result in male urine and one in what unquestionably is a nonpregnant urine[8] The same substrate was used throughout, being prepared according to the method given below The ingredients used in the color reactions have been the same throughout, being withdrawn from the same stock bottles All digestions were made in an electrically controlled and heated incubator at 37 5 C with a fluctuation of 0 5 degree[9] New carbon dioxid flasks were used in the digestions, and in questionable cases, Jena glass test tubes which had never been unwrapped were used for the color reactions The same brand of filter paper (S and S 589) was used throughout The only common factor were the funnels used in the filtrations, but these were washed thoroughly in hot water and dried with tissue towels before use

The substrate was prepared as follows

The placenta, which had been obtained within a few hours after delivery, was carried to the laboratory and placed directly on ice It was removed in small sections, washed in lukewarm tap-water and squeezed, so that all excess of blood was removed Then the portions recommended by Abderhalden were removed by dissection and dropped as small pieces into physiologic normal saline (0 9 per cent.) in a beaker which rested under a mechanical stirrer The stirring was continued for periods of fifteen minutes and then the saline was changed This continued throughout the day At evening the mass was transferred to a large glass container and placed under the tap with cheese-cloth covering to keep the pieces of substance from washing away The washing was continued through the night In the morning, the substrate, now quite white, was placed on filter paper to remove the excess water and then transferred to a porcelain plate which rested on an electric hot-plate. A current of air was blown across the mass by means of a slowly moving electric fan, and the temperature regulated so that it registered under 50 C Drying was completed within one and one-half hours, when the mass was ground to a powder in a mortar and transferred to a weighing bottle in a desiccator over sulphuric acid Ninhydrin tests on the dialysate from an aqueous suspension were negative Biuret tests applied to the filtrates from suspensions were also negative There is no evidence that any appreciable amount of autolysis occurred

Regarding the rôle of bacteria, the following may be said Through the kindness of our Professor Schultz, of the Department of Pathology, we autoclaved urines and, after cooling, inoculated them with cultures of *B coli communis* and *B proteus,* which are to be found in practically every urine When these urines were left in contact with the substrate, placenta, a strong biuret reaction was obtained according to the method of Malone It is obvious that we have here a serious factor and one which cannot be controlled in the ordinary clinical method It is possible that the positive controls which we found are explicable on this ground The objection that we have introduced a virile strain of bacteria which never occur in such a degree of virulence cannot be well maintained, for toluol affects the growth of these bacteria but slightly, and consequently there is nothing to inhibit the growth of these species, with ultimate effect on the reaction

Malone's method was followed throughout Our results are given in the accompanying tabulation

RESULTS OF EXPERIMENTS

Total urines of females known to be pregnant	24
Of these, those giving definitely positive reaction	17
Of the total number, those giving weak, or indefinite reaction	2
Of the total number, those giving negative reaction	5
Of the total number, those giving initially, positive reaction	2
Total number of controls, female	5*
Of these, those giving negative reaction	4
Of the total number, those giving positive reaction	1
Total number of controls, male	11*
Of these, those giving negative results	10
Of the total number, those giving positive reaction	1
Urines autoclaved at 15 pounds, cooled and inoculated with B coli communis	2
Reaction of these urines, positive	2
Urines autoclaved as before and inoculated with B proteus	2
Reaction of these urines positive	2
Urines checked as to preservative (thymol in $CHCl_3$), with thymol	2
Reactions positive	2
Urines without thymol, not iced and standing at room temperature twenty four hours	2
Reactions positive	2

* All gave negative reaction, initially

CONCLUSIONS

1 There are many objections to the method from the theoretical aspect

2 Our experiments, while showing acceptable results in 66 per cent of the cases examined, yet leave a high degree of uncertainty in the remaining third

3 The appearance of positive reactions in certain cases known to be negative are inexplicable, except as involving an ever-present error, such as the factors bacteria, excreted pepsinlike enzymes, etc

4 The test, as at present conducted, cannot safely be depended on as a diagnosis of pregnancy, owing to

(*a*) The nonspecificity of the reaction

(*b*) The frequency of errors

Vivisection and Brutality—Not only is it not true that vivisection experiments tend to make the experimenter callous, the reverse is actually the case I can testify from my own experience that it is harder to make the fiftieth experiment than the first, that one's sympathies are more awakened rather than destroyed There is no doubt that abuses are possible—are even probable Yet most of the stories told to illustrate the brutality of vivisectors in things aside from the experiments themselves are highly improbable —Maxwell

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[8] The subject is unmarried, with history not admitting the possibility of a positive reaction

[9] Hearson thermostat

RÔLE OF THE LYMPHATICS IN ASCENDING RENAL INFECTION

PRELIMINARY REPORT *

DANIEL N. EISENDRATH, M.D.
AND
JACOB V. KAHN, M.D.
CHICAGO

We have just completed a series of twenty-seven experiments on dogs and rabbits which show that infection travels from the bladder to the kidneys and perinephritic tissue by way of the lymphatics in the wall of the ureter and not along its mucous membrane. Our observations, so far as we can ascertain, are the first to show that the lymphatic capillaries of the periureteral sheath (in laboratory animals as well as in the human being) play a most important part in ascending infection. Going a step farther, the constant finding of evidences of infection in the immediate vicinity of the rich network of periureteral blood vessels makes it seem plausible that infection can travel, as Sampson and Bauereisen assert, to the kidneys from the female genitalia and other abdominal viscera which lie in close relation to the ureter.

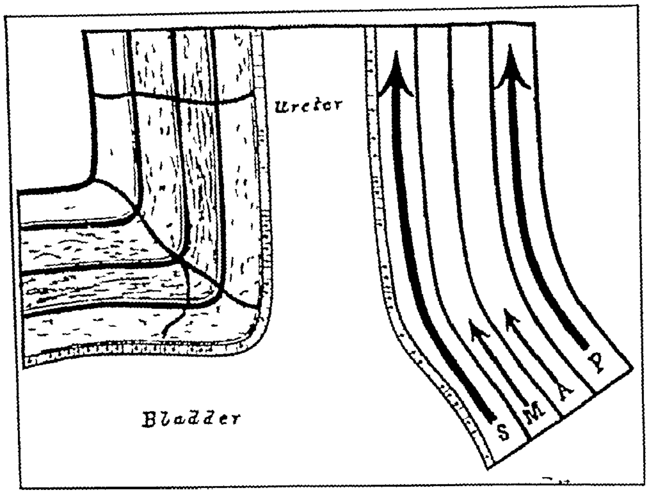

Fig. 1.—Diagrammatic view showing how the lymphatics of the bladder communicate with those of the ureter. On the left side are shown in heavy lines the various lymph vessels and how they communicate. On the right side *S* and *P* represent the chief routes of ascending infection in the submucous and periureteral coats, while *M* and *A* show the less important routes in the muscular and fibrous coats.

Franke has shown how the lymphatics of the ascending colon communicate with those of the right kidney, and thus explains some, at least, of the renal infections in children. The assertion of Bauereisen, that cystitis and renal infection following gynecologic operations take place via the lymphatics, seems quite plausible in view of our results. The older view, that infection from the lower to the upper urinary tract travels within the lumen of the ureter, that is, against the secretory current, must, we feel, be abandoned except when the ureter is completely obstructed by a calculus, stricture or external pressure.

In nearly all previous animal experiments, conditions were established, such as ligation of the ureter, injection into the renal pelvis, or implantation into the bladder, which seldom exist clinically. Under these conditions it is not surprising that evidences of infection are found (Aschoff[1]) within the tubules of the kidney seven hours after injection into the ligated ureter. The changes, both in the ureter and in the kidney itself, are usually so advanced under these circumstances that, as Mueller has recently shown, one cannot trace in a satisfactory manner the route along which the infection first traveled.

We have attempted to imitate the conditions as found in the human being by injecting an emulsion made by mixing the scrapings of agar slant cultures of the organisms commonly found in urinary infections with sterile salt solution, and then injecting it into the bladder of animals. After thorough cleansing of the genitalia, preferably female animals, a No. 4 or 5 (French size) ureteral catheter, such as is employed for roentgenoscopic work, and which can be boiled, was inserted into the bladder, some of the urine taken for cultures, and then an emulsion of bacteria injected into the bladder. All injury to the bladder and ureters was thus avoided, and the conditions under which the organisms migrated upward resembled those found clinically as closely as it was possible to do in the animal experiments. Paraffin sections were taken from a number of places in the bladder and kidney, and were studied serially. In order to trace the infection upward along the ureter, every portion of the latter was cut longitudinally as well as serially, so that no areas would be omitted. In five rabbits and eight

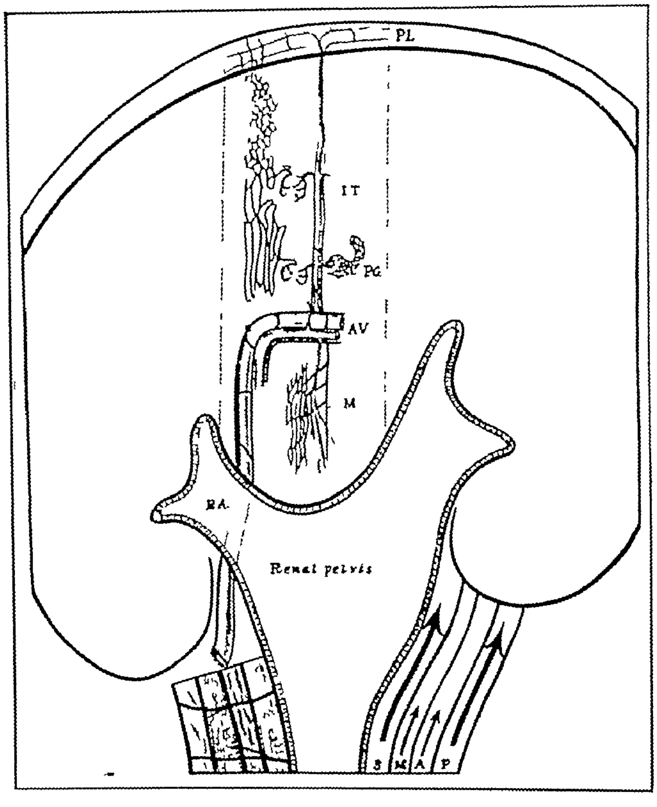

Fig. 2.—Routes of infection from the ureter to the renal pelvis and into the kidney. *S, M, A, P*, same as in Figure 1. *RA*, renal vessel lying in subpelvic tissue. *AV*, intrarenal vessels (Kumita) surrounded by lymphatics. The latter communicate with the network between the tubules of the cortex (*IT*) and those of the medulla (*M*). *PG*, periglomerular lymphatic network. *PL*, communication between the intrarenal lymphatics and those of the capsule.

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* Read at the meeting of the Western Surgical Association, Dec. 17, 1915.

* From the Morris Institute of the Michael Reese Hospital and the Department of Surgery of the College of Medicine of the University of Illinois. Experiments will be published in full later.

[1] Aschoff: Pyelonephritis, Jena, 1893.

dogs the *Bacillus coli* was injected into the bladder In three rabbits and four dogs the *Staphylococus aureus* and in three rabbits and three dogs the *Proteus vulgaris* was used In one rabbit an emulsion made by mixing acute gonorrheal pus with salt solution was injected

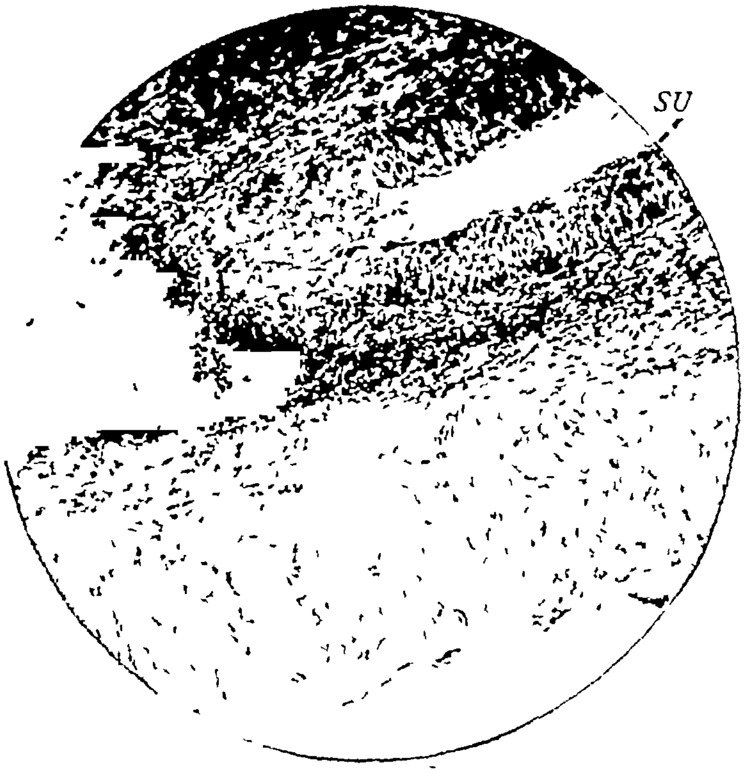

Fig 3—Section of dog's ureter from Experiment 411 showing marked infiltration in the submucous layer (*SU*) with other coats intact

Summarizing our results, we find that the inflammatory infiltrations follow in a most accurate manner the course of the lymphatics, as determined by the work of Kumita[2] and Bauereisen[3] (Figs 1 and 2)

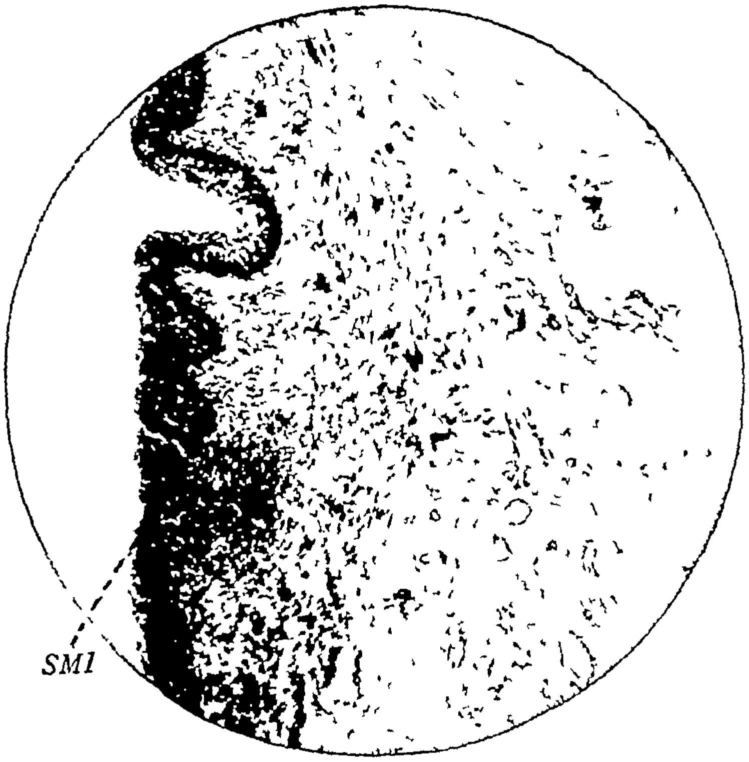

Fig 4—Section of dog's renal pelvis from Experiment 411, showing an area of submucous infiltration (*SMI*) with normal mucosa over it

In the early stages of infection, the infiltration is found in the submucous layer of the bladder, and is especially dense around the smaller vessels in this layer One can then follow the infiltration up into the ureter where, as in the bladder, it is most marked in the submucous coat in the lowermost portion of the ureter A little farther up, however, in addition to the submucous infiltration, a new factor is introduced We now see that the periureteral sheath, composed of loose areolar tissue in which many blood vessels lie, plays an important, if not chief, part in transmitting the infection upward Examination of serial sections longitudinally of the entire ureter show plainly how in the early stages the infiltration around and in the walls of the blood vessels of the periureteral sheath is the earliest and most constant finding As the infection progresses, the other coats become invaded from without inward, the mucosa remaining intact, until the infection is well advanced We find the same sequence of changes in the human ureter, on which we shall report in a later paper

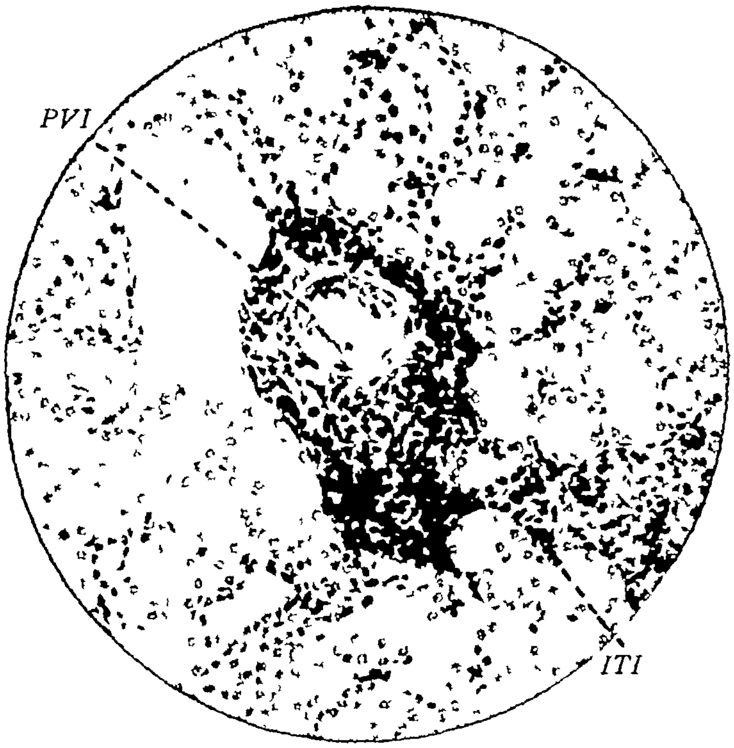

Fig 5—Section of dog's kidney, showing area of dense perivascular round cell infiltration (*PVI*), and also slight intertubular infiltration (*ITI*)

In the kidney pelvis the infiltration is first seen in the subpelvic areolar tissue, and again around the blood vessels, the overlying mucosa remaining intact (Fig 3) Within the kidney our experimental work confirms the observation of Mueller[4] in the human being The infiltration is seen at first around the renal vessels which pass into the parenchyma to form the arcual vessels, as in Figure 4, then in the cortex the infiltration is seen between the tubules and around the glomeruli, and as the infection advances, the medulla is invaded in the same intertubular manner, and finally the infiltration breaks into the lumen of the tubule in the more advanced stages In one experiment, the infiltration followed very closely the lymphatics which allow of communication between the cortex and the lymphatics, penetrating the true capsule, which in turn communicate with this perinephritic tissue We are convinced, as Bauereisen and others have asserted, that there is a free communication between the lymphatics of the bladder and those of the ureter, and that the lymph current is in an upward direction.

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[2] Kumita Arch f Anat, 1909
[3] Bauereisen Ztschr f gynak Urol, ii
[4] Mueller Arch f klin Chir, xcvii

Our work shows that the connecting link between the lymphatics of the ureter and those within the kidney is along the lymphatics of the subpelvic areolar tissue which surrounds the blood vessels as they enter the kidney tissue. They follow within the organ itself the course of the intertubular, periglomerular and perivascular lymphatics. In six out of twenty-seven experiments, we obtained pure cultures of the same organism from the renal pelvis which we had injected into the bladder. In none of the animals was a positive culture obtained from the heart's blood, so that hematogenous infection can be excluded.

At the suggestion of Drs. D. J. Davis and E. G. Kirk, to whom we are indebted for many courtesies, we studied the urinary organs in a number of normal laboratory animals as controls. In six dogs, as carefully sectioned and studied as our injection experiments, we found no evidence of infiltration. If one adds to this number five completely negative dog experiments, we have eleven dogs with absolutely no pathologic changes. In our rabbit controls we have thus far, out of twelve normal animals, found in five of them very slight evidences of infiltration as follows. In one there was a trace of perivascular infiltration around one of the smaller vessels of one kidney of a large number of sections examined. In a second rabbit there was a very slight, small, round cell infiltration in the subpelvic and intertubular tissue of one kidney. This was present only in one out of the large number of sections examined. In the other three rabbits there was a very slight degree of infiltration around one of the blood vessels in the kidney. We have never been able to find any changes in the bladder or ureters of any of the six control dogs or in the twelve control rabbits. In three guinea-pigs, used as a control, we also found no changes in any of the urinary organs. The known susceptibility of rabbits to all kinds of infection, and the fact that the infiltration was present in only a few places in the kidney, and here only where the lymphatics are found, rather confirms our experimental work than otherwise. The existence of a slight degree of ascending urinary infection in these control rabbits is not at all improbable. The relatively large number of normal control dogs (eleven) leaves, at least, experiments in these animals beyond every shadow of doubt, and some of our most positive results were obtained in dogs.

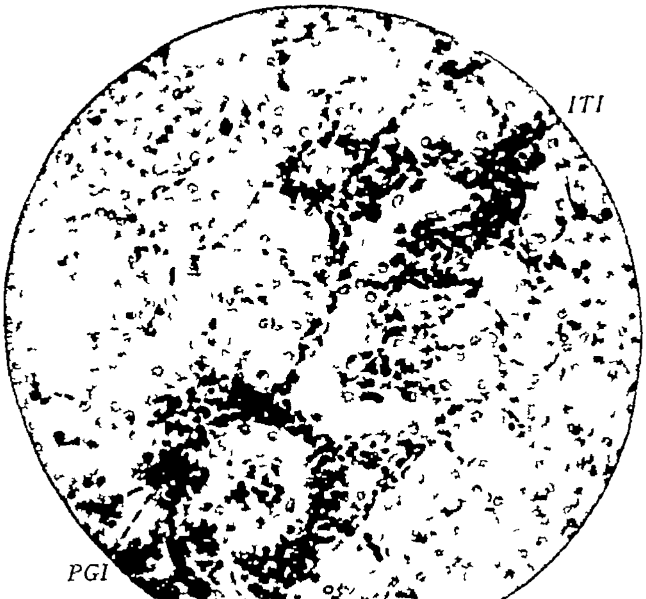

Fig. 6.—Section of rabbit's kidney from Experiment 310, showing typical infiltration around a glomerulus (*PGI*), and also between the tubules (*ITI*).

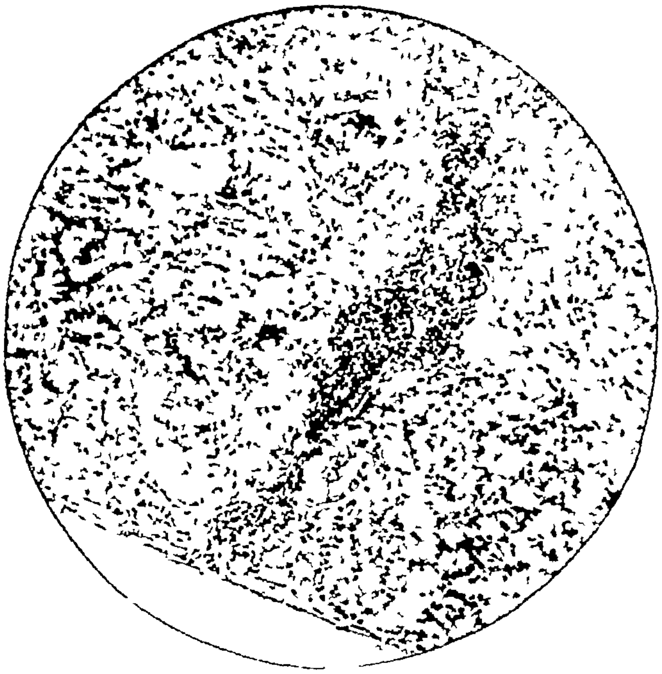

Fig. 7.—Section of dog's kidney from Experiment 418, showing an intertubular infiltration extending directly to the capsule of the kidney, showing how infection is carried from intrarenal lymphatics to those of the capsule and the perinephritic tissue.

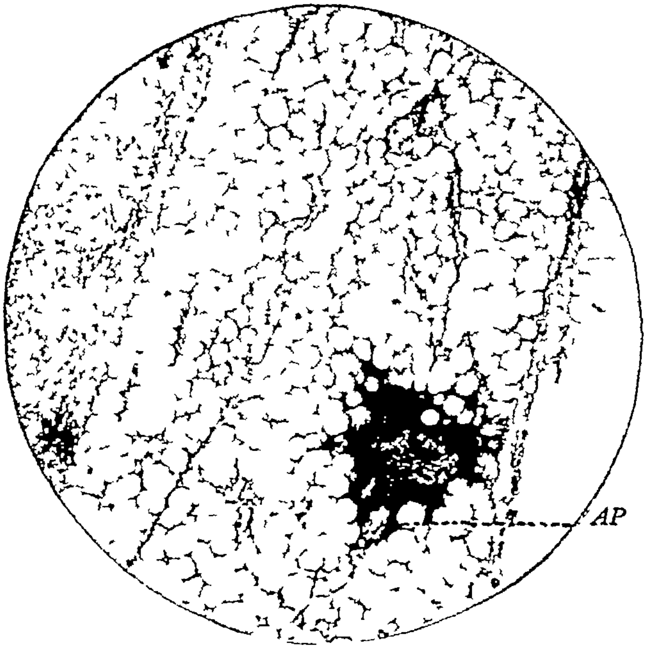

Fig. 8.—Longitudinal section of periureteral sheath of dog (Experiment 410), showing an area of dense inflammatory celled infiltration around a periureteral vessel (*AP*).

The only other experiments of a similar nature to our own were those of Hess[5] and Bauereisen. Hess used *Bacillus coli*, and found perivascular infiltrations in the ureter in two dogs Bauereisen found that in animals whose bladders were injected with an emulsion of tubercle bacilli, the infiltrations followed the course of the lymphatics from the bladder to the ureter and then invaded the coats of the ureter from without inward

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[5] Hess: Mitt. a. d. Grenzgeb. d. Med. u. Chir., xxvi.

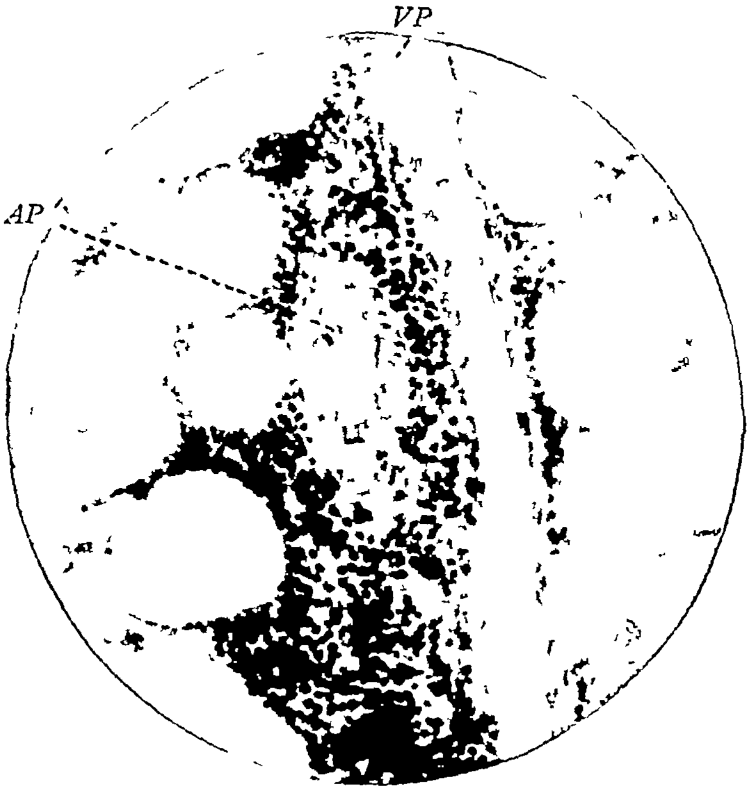

Fig 9—Longitudinal section of dog's ureter from Experiment 410, showing a vein longitudinally (*VP*) and an artery (*AP*) transversely with the infiltration in the wall and immediately adjacent to them in the periureteral sheath

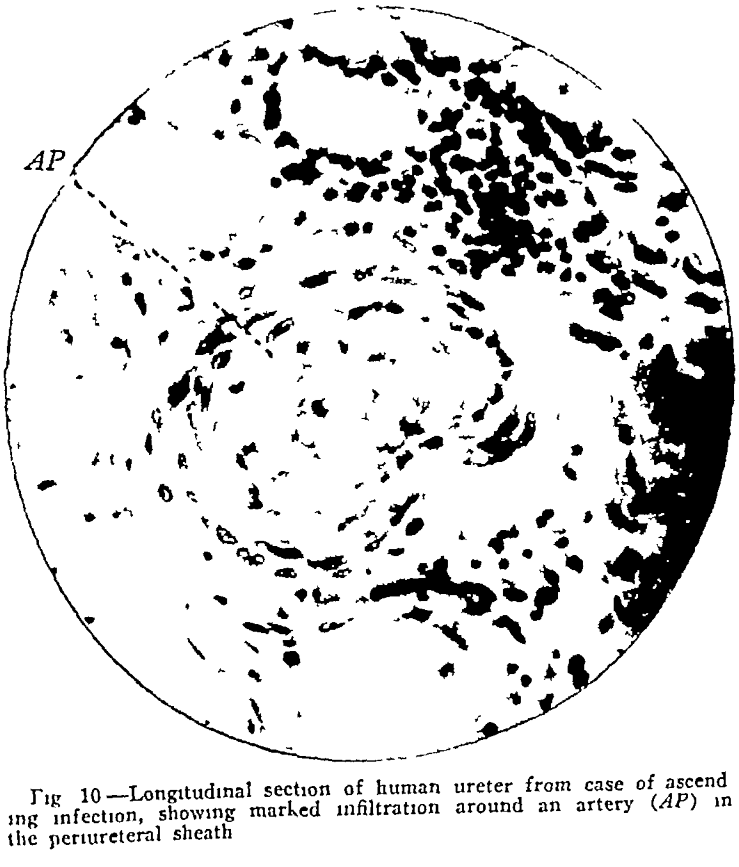

Fig 10—Longitudinal section of human ureter from case of ascending infection, showing marked infiltration around an artery (*AP*) in the periureteral sheath

The many clinical applications of our experimental work along this line will form the subject of a future paper

30 North Michigan Avenue

SYPHILIS OF THE STOMACH

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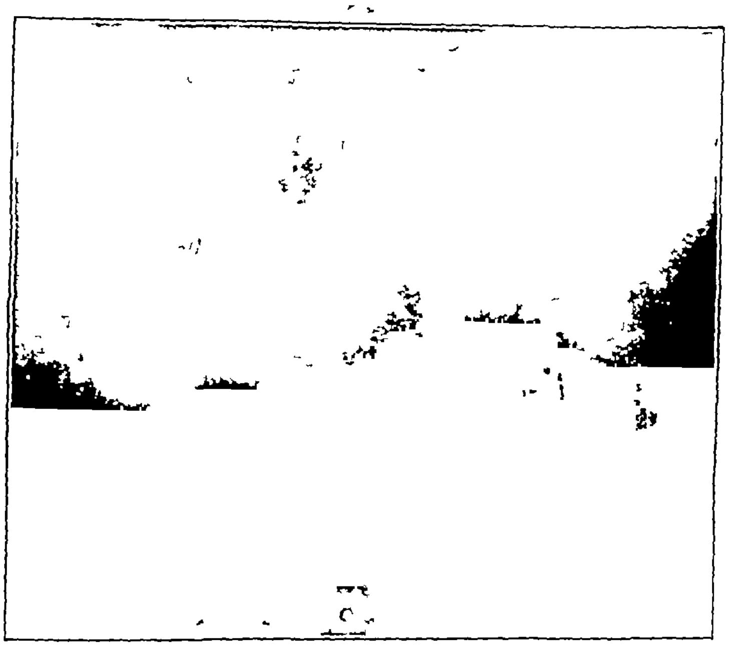
ATLANTA, GA

E W, man, aged 28, was referred to me, June 1, 1915, for regurgitation of gas, nausea, frequent vomiting, distress after eating, a continuous sensation of weight in the epigastrium and an excruciating gastralgia

Up to the onset of digestive distress, which occurred six months previously, his past history was uneventful with one exception, a small sore on the penis when 20 years of age This sore, having readily healed under local application, was almost forgotten

The patient was somewhat cachectic in appearance, was losing weight, and his physician was fearful of gastric cancer

Physical examination was negative Gastric analysis showed absence of both free and combined hydrochloric acid while a trace of lactic acid was present A roentgenogram disclosed a distorted stomach evidently due to intragastric new growth A Wassermann test was 4+



Roentgenogram showing gummatous involvement of stomach This roentgenogram had it been interpreted apart from other findings, might have led to the erroneous diagnosis of gastric cancer

The patient was at once put on antisyphilitic treatment appropriate for tertiary lesions, while for his dyspeptic symptoms, he received a simple carminative

He was allowed a liberal soft diet at first, a light diet after ten days, and after a month a general diet

His improvement, perceptibly noted three days after the first injection of salvarsan, has persisted, and at present he reports a practically comfortable and normal digestion

The feature of interest in this particular patient was the difficulty in differentiating between syphilis of the stomach and cancer of the stomach He was rather young for the latter, but age alone gives no positive evidence Even the roentgenogram, unless interpreted in conjunction with the results of other investigations, would have been misleading in this individual

Syphilis of the stomach, though rare, is now being diagnosed more frequently than in the past Chiara found the specific lesions present in the stomach in but three out of 242 necropsies performed on syphilitic subjects Lockwood, in 1913, estimated that there were on record only about fifty cases of gastric syphilis It must be remembered, however, that ordinary ulceration of the stomach may occur in syphilitic persons with the same frequency as in those without the constitutional taint.

It is said that the late Hunter McGuire stated on one occasion that much of his success was due to the fact that in obscure manifestations of disease, he treated the patient for syphilis. This might apply with satisfaction to some of our long-suffering dyspeptics, who have run the therapeutic gamut without relief, who have become pessimistic invalids, burdensome to both themselves, their physicians, and the community at large.

922 Candler Building

RADIUM IN THE TREATMENT OF SYNOVIAL LESIONS OF THE SKIN

RICHARD L SUTTON, M D
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It is probable that the true nature of synovial lesions of the skin was first discovered by Sidney Jones and G H Makins[1] of London, but it is to the late James Nevins Hyde[2] that the general profession is indebted for a classical description of the disorder. In the first edition of his treatise on diseases of the skin, he states that lesions of this type

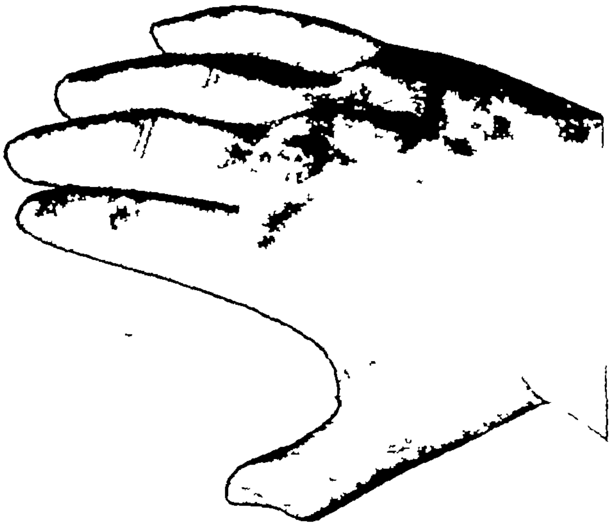

Fig 1 (Case 1) —Synovial lesion of the skin of eighteen months' duration

> Occur in the form of wart-like projections from the skin, pseudovesicles, and bullae, always over the sites of bursae connected with tendons, traversing the small articulations of the hand and foot. They are seen over the metatarsophalangeal articulations, and in the hand most frequently over the dorsal face of the articulation between the distal and adjacent phalanges of the index finger and thumb. The first form is that of a roundish, corneous, pea-sized wart with a yellowish center, of long duration, usually insensitive unless roughly handled. When punctured there exudes a syrupy, yellowish, or grumous fluid, which continues to form after repeated puncture. Split-pea-sized vesicles, and bullae as large as a 50 cent piece, often exceedingly painful, are also seen especially on the feet, with simply an epidermic roof wall. Each lesion contains the same yellowish or whitish fluid, occasionally mingled with masses like sago grains. In every case the contents of the lesions are supplied by a synovial bursa beneath the skin, with which the lesion is either directly connected, or in communication by a short sinus.

More recently Lingenfelter[3] has described a typical example of the affection occurring on the dorsal aspect of the third phalangeal articulation of the second digit of the right hand, in a woman aged 51. The lesion had been present for fourteen months. Pain of a sharp, stabbing character, radiating in all directions, was present at rather frequent intervals, and was usually succeeded by a throbbing ache. In a discussion of Lingenfelter's communication, Ormsby[4] called attention to Hyde's earlier investigations and report, and, in addition, described four cases which had come under his observation during the past eight years. Three of his patients were women, between the ages of 46 and 50, the other being a man, aged 66. The cause of the disorder is unknown. The microscopic and cultural findings were negative in Ormsby's cases. He says that an arthritic diathesis is strongly suggested.

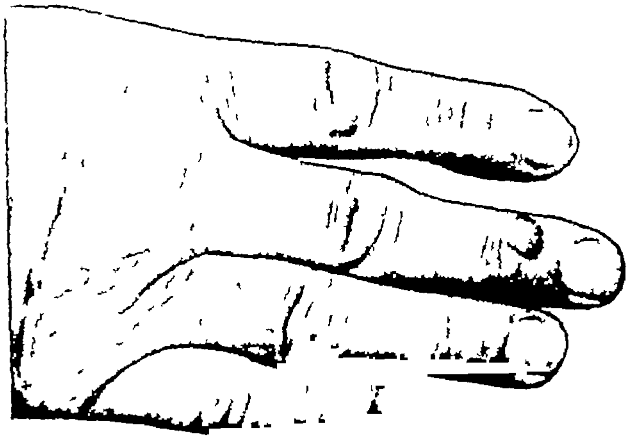

Fig 2 (Case 2) —Synovial lesion of the skin of five months' duration. The inflammatory areola is due to the use of caustics.

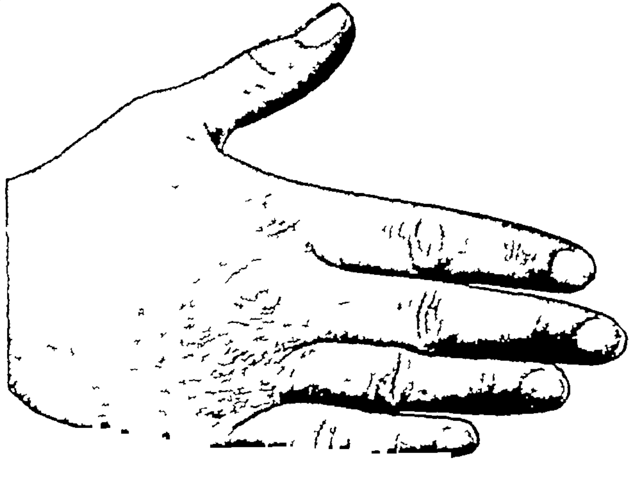

Fig 3 (Case 1) —Showing the condition of the hand four months after treatment with radium was discontinued

The lesions are extremely resistant to treatment. Hyde recommended complete excision or destruction of the secreting cyst wall. Lingenfelter employed the Roentgen ray with success. Ormsby also found the use of this agent curative in two instances, although used *Bacillus coli*, and found perivascular infiltrations in the ureter in two dogs Bauereisen found that in animals whose bladders were injected with an emulsion of tubercle bacilli, the infiltrations followed the course of the lymphatics from the bladder to the ureter and then invaded the coats of the ureter from without inward

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[1] Jones Sidney and Makins G H Cited by Hyde Diseases of the Skin (Footnote 2)

[2] Hyde A Practical Treatise on Diseases of the Skin, Philadelphia 1883 p 444

[3] Lingenfelter Jour Cutan Dis. 1913 p 647

[4] Ormsby Jour Cutan Dis 1913 p 943 Diseases of the Skin, Philadelphia 1915 p 515

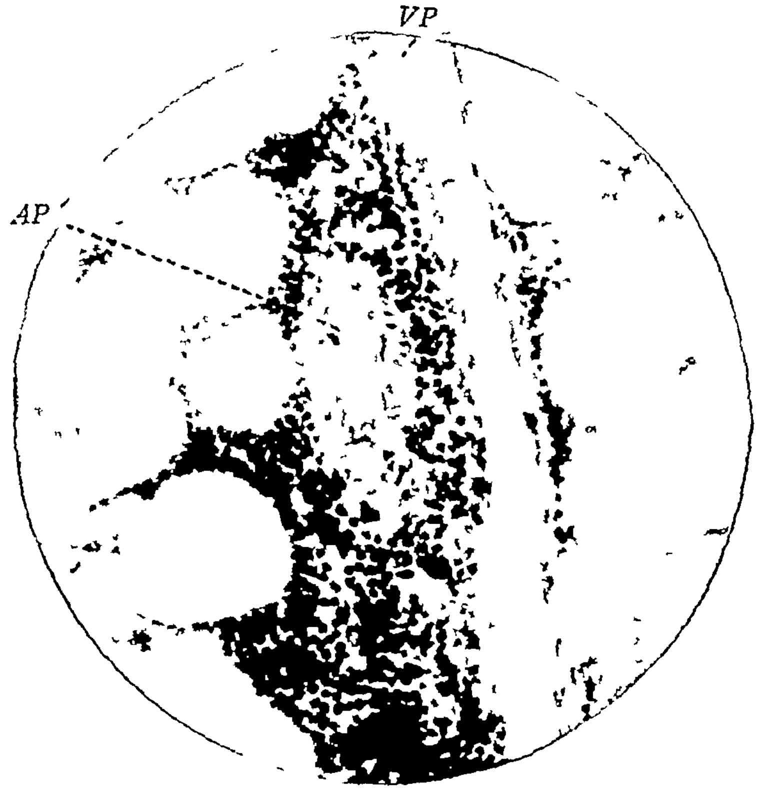


Fig 9—Longitudinal section of dog's ureter from Experiment 410, showing a vein longitudinally (*VP*) and an artery (*AP*) transversely with the infiltration in the wall and immediately adjacent to them in the periureteral sheath

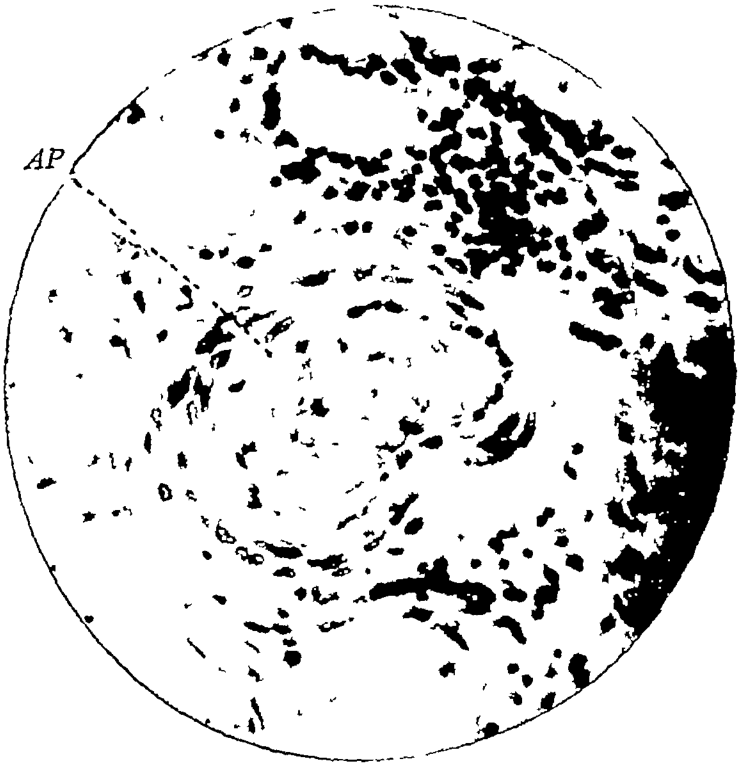


Fig 10—Longitudinal section of human ureter from case of ascending infection, showing marked infiltration around an artery (*AP*) in the periureteral sheath

The many clinical applications of our experimental work along this line will form the subject of a future paper

30 North Michigan Avenue

SYPHILIS OF THE STOMACH

GEORGE M NILES, M D

Gastro Enterologist to the Georgia Baptist Hospital and the Atlanta Clinic

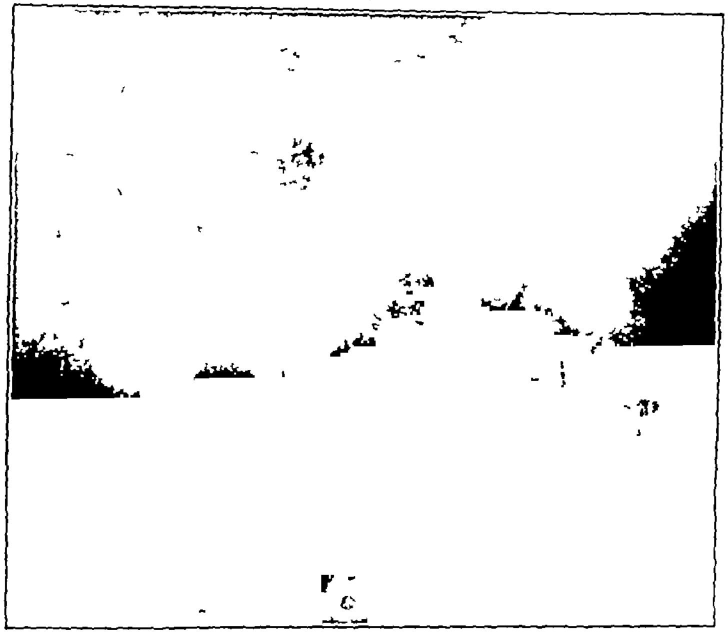
ATLANTA, GA

E W, man, aged 28, was referred to me, June 1, 1915, for regurgitation of gas, nausea, frequent vomiting, distress after eating, a continuous sensation of weight in the epigastrium and an excruciating gastralgia

Up to the onset of digestive distress, which occurred six months previously, his past history was uneventful with one exception, a small sore on the penis when 20 years of age This sore, having readily healed under local application, was almost forgotten

The patient was somewhat cachectic in appearance, was losing weight, and his physician was fearful of gastric cancer

Physical examination was negative Gastric analysis showed absence of both free and combined hydrochloric acid, while a trace of lactic acid was present A roentgenogram disclosed a distorted stomach evidently due to intragastric new growth A Wassermann test was 4+



Roentgenogram showing gummatous involvement of stomach This roentgenogram, had it been interpreted apart from other findings, might have led to the erroneous diagnosis of gastric cancer

The patient was at once put on antisyphilitic treatment appropriate for tertiary lesions, while for his dyspeptic symptoms, he received a simple carminative

He was allowed a liberal soft diet at first, a light diet after ten days, and after a month a general diet

His improvement, perceptibly noted three days after the first injection of salvarsan, has persisted, and at present he reports a practically comfortable and normal digestion

The feature of interest in this particular patient was the difficulty in differentiating between syphilis of the stomach and cancer of the stomach He was rather young for the latter, but age alone gives no positive evidence Even the roentgenogram, unless interpreted in conjunction with the results of other investigations, would have been misleading in this individual

Syphilis of the stomach, though rare, is now being diagnosed more frequently than in the past Chiara found the specific lesions present in the stomach in but three out of 242 necropsies performed on syphilitic subjects Lockwood, in 1913, estimated that there were on record only about fifty cases of gastric syphilis It must be remembered, however, that ordinary ulcerarespiration It was quite elastic and easily indented with a probe Its apparent size was 1 inch in diameter (Fig 1)

Because of the unusual appearance of the tumor, it was thought best to remove it by thyrotomy The possibility of the condition being an internal diverticulum of the larynx was considered before operating July 24, 1915, under ether anesthesia, a thyrotomy was done by Dr Judd A midline incision was made, and the hyoid bone divided to give better exposure of the larynx On the larynx being opened, a tumor was seen above the left true cord, dilating the aryteno-epiglottidean fold This was incised, and the tumor, which apparently had no definite pedicle, was readily shelled out The patient's voice gradually improved after the operation She was discharged, Aug 17, 1915, and advised to return in three months for another examination The excess of tissue on the left side of the larynx following the removal of the tumor prevented full return of the voice, and it seemed possible that the redundant tissue might have to be removed later by the intralaryngeal route. When the patient returned, Dec. 2, 1915 her voice was about normal although a trifle lower in pitch than before the onset of the hoarseness Examination showed the larynx normal save for a slight interference in the motion of the left cord and some slight scarring of the left side of the larynx. She stated that her general health had improved markedly since the operation

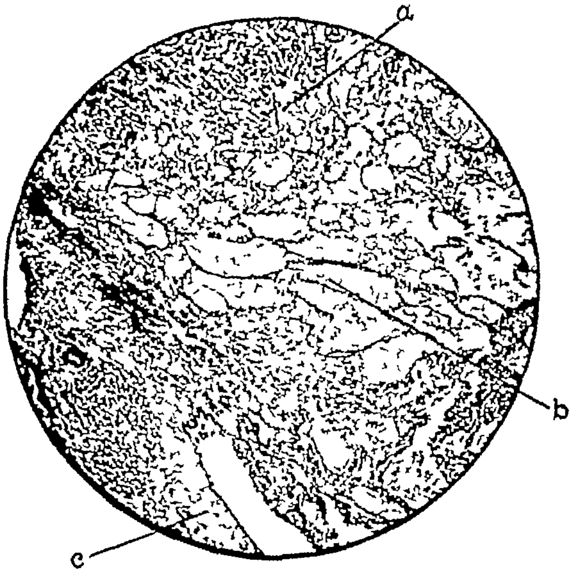


Fig 3—Photomicrograph (a) fibrous tissue (b) lipomatous tissue (c) area of degeneration.

Pathology—The gross specimen was a round tumor 2.5 by 2.5 cm in size with a complete capsule but no demonstrable pedicle On section the periphery of the tumor was firm while the central portion was broken down and degenerated Microscopic sections showed mostly fibrous tissue with some fat cells, while toward the central portion of the tumor the lipomatous tissues increased in amount There were areas of degeneration in the section The diagnosis was degenerating fibrolipoma (Figs 2 and 3)

Etiology—Goldstein states that the etiology of lipoma is questionable, and that it may be due to one of three causes (1) a simple hyperplasia of encapsulated fat-cells which Chiari has observed microscopically about the plane of the ventricle, (2) an invagination of mesodermic tissue which develops into lipoma, and (3) a disturbance in the chemistry of cells in which fat is deposited It would seem that the pathology of these tumors does not differ markedly from the pathology of lipoma or fibrolipoma elsewhere in the body, but their presence in the larynx is unusual In the case herein reported, the fact that the tumor did not have a pedicle and consequently a poor blood supply probably accounts for the central degeneration

COMMENT

There is no age incidence in lipoma The youngest patient reported in the literature was a boy 8 years of age (Ingals, 1905) Holt[3] in 1854 reported one in a man of 80 years, as does De Santi, in 1903 The point of origin of lipomas is usually the epiglottis, the aryteno-epiglottidean fold, or the ventricle, and they are usually attached by pedicles which are either quite thin or have thick, heavy bases On account of its rarity, I mention here a case reported by Hunt (1907) of a lipoma attached to the first three rings of the trachea The tumor was removed by external operation

In the case I have reported, the lipoma was situated within and distending the aryteno-epiglottidean fold It seems to be the only one reported in this position There was no demonstrable pedicle The possibility that the tumor originated in the ventricle must be thought of

Lipomas may be multiple, as in the case reported by Goebel In this case the tumor was attached to the left aryteno-epiglottidean fold, and to the posterior wall of the larynx, one prolongation of the tumor protruded into the mouth like a second tongue, while another portion extended into the esophagus Golbek[4] and von Schroetter[5] have reported multiple lipoma

Lipomas may also appear as small pedunculated polypoid tumors They may be situated so as to fill the entire upper part of the larynx and give rise to marked dyspnea In some persons dying of suffocation, lipoma obstructing the larynx has been found at necropsy

DIAGNOSIS AND TREATMENT

In Garel's case a diagnosis of eversion of the ventricle of the larynx was made, and at necropsy the tumor was found to be a fibrolipoma of the ventricle The picture presented in my patient brought up the possibility of an internal diverticulum of the larynx, the location and elasticity of the tumor indicating similar characteristics to such a condition It is impossible, however, to make a definite diagnosis of this rare condition until the tumor has been removed and a microscopic examination made

The small pedunculated lipoma, which can be definitely diagnosed by endoscopic methods, may best be cared for by endoscopic operation In the large tumors in which it is impossible to make a definite diagnosis before operation, it is best to explore by a thyrotomy, so that whatever is necessary may be done with less likelihood of danger to the patient I have seen so few cases of this kind, however, that it is difficult to draw definite conclusions regarding the methods of treatment

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[3] Holt Fatty Pendulous Tumor of the Pharynx and Larynx Tr Path. Soc London, 1854, v 123

[4] Golbek (or Holbek) M K Lipoma multiplex arborescens aditus ad Laryngem Protik. Zasiedania Imp Kavkazsk med Obshtsh, Tiflis 1891 1892 xxviii 422 quoted by Goldstein

[5] Von Schroetter L Lipoma des Kehlkopfes Vorlesungen uber die Krankheiten des Kehlkopfes, 1893, 271, quoted by Goldstein

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Nipa-Palm Alcohol—The manufacture of nipa-palm sugar and alcohol in the Philippine Islands has already been referred to in The Journal. In British North Borneo, according to *Commerce Reports,* the total area of nipa swamp is greater than that of the Philippines, probably exceeding 50,000 acres which are easily available. The possibilities of alcohol manufacture from this source have been reported on by the American, D M Matthews, chief forestry officer of the island It is said that 200 acres of nipa under proper management will yield 500 gallons of alcohol a day during six or seven months of the year when the sap flows The probably extended use of alcohol as a motor fuel will no doubt encourage the exploitation of this source for alcohol

HEMOTHORAX DUE TO RUPTURE OF ANEURYSM OF AORTA

REPORT OF CASE WITH RECOVERY, SECOND RUPTURE CAUSING DEATH

EDWARD H GOODMAN, M D
AND
RICHARD J MILLER, M D
PHILADELPHIA

In 1914, one of us[1] reported a case of hemothorax caused by a rupture of an aneurysm which presented an unusual feature, namely, recovery The fact that aneurysms rupture infrequently (0 69 per cent of all aneurysms), coupled with the fact that a search of the literature failed to reveal a similar instance, provided the reasons for reporting this case We have seen recently a somewhat similar patient, one who had recovered from a rupture of an aneurysm into the left pleural cavity, but who eventually died following a massive rupture some time later

REPORT OF CASE

History—A P, aged 59, married, locomotive engineer for the past thirty-five years, was admitted to the service of Dr James E Talley, Presbyterian Hospital, Oct 20, 1915, complaining of pain in the abdomen, particularly in the left side, of pain in the back and about the heart, and of dyspnea

The patient stated that he had had none of the usual children's dieases except scarlet fever For the past fifteen years he had suffered with "rheumatism" in back which at one time confined him to his bed for four months His joints have never been swollen or tender In 1887 he had a sunstroke which incapacitated him for a year, and in 1879 he had gonorrhea Syphilis was denied He used to drink immoderately, but had not touched alcohol for some time He drank tea and coffee moderately

Aorta and adjacent parts *A* border of right lung, *B*, heart *C* aorta, *D*, dilated aortic arch, *E*, area of rupture, *F*, pericardium, *G* atelectatic left lung

The present illness dated from 1913, in which year he was admitted to the hospital, June 16 He was suffering at this time with pain in the epigastrium, in the left abdominal region, over the heart, and in the left lumbar region, and complained a great deal of dyspnea He stated that six weeks before admission he had begun to be short of breath, which had increased until the date of admission The pain began about a week before admission and was so severe that he was doubled up with it

The main points in the examination at this time were the negativeness of the physical signs The heart sounds were weak but regular, the pupils were equal, the pulses were equal and there was no impairment of resonance over the left chest

The laboratory findings were a negative urine, secondary anemia, and a positive Wassermann reaction

Patient was discharged improved, July 15, 1913

On readmission to the ward in October, 1915, the patient stated that he had been unable to work since December, 1913, on account of pain in the chest, abdomen and about the heart, and because of shortness of breath For the past ten days he had been confined to bed on account of anginal pains and dyspnea The dyspnea was increased by exertion, but the anginal pains occurred even when he was lying quietly in bed The patient complained of much weakness and loss of appetite

About six weeks before admission he had an attack of pain so severe that he lost consciousness and fell fainting to the ground

Examination—The patient was a well developed plethoric looking man, past middle life The eyes reacted sluggishly to light and to accommodation, the left pupil was larger than the right During the examination, the patient was very restless and irritable, and seemed to be suffering with a great deal of pain in the left side of the thorax anteriorly and posteriorly and in the left abdomen just below the ribs

The cardiac impulse was faintly seen and faintly palpable in the fifth and sixth interspaces, slighly outside the left midclavicular line The right border of the heart was 4 cm from the midsternal line and the left border 12 5 cm There seemed to be a widening of the normal dulness over the aorta, particularly to the right On auscultation the heart sounds were rapid and weak, with occasionally a premature beat, but no murmurs were heard

The anteroposterior diameter of the chest was increased and the expansion was limited on the left side Anteriorly the tactile fremitus was equal on the two sides The percussion note was normal on both sides

Posteriorly, the right revealed normal findings, but on the left side there was flatness from the spine of the scapula to the base of the lung, and over this area there was diminished tactile fremitus as far as the ninth rib, and below this no fremitus was felt Breath sounds were absent over the base of the lung, but were faintly heard toward the upper level of the flat area Egophony was heard in the posterior axillary line about the fourth and fifth interspaces There was marked tenderness over the lower left chest and in the left abdominal region

Patellar reflexes were normal, blood pressure 132 and 101, the pulses unequal, and the arteries were slightly sclerotic

A sphygmographic tracing revealed extrasystoles

An electrocardiographic examination was attempted, but on account of the patient's restlessness could not be made

The urine was 1 020, and contained a faint trace of albumin and a few hyaline and granular casts The phenolsulphonephthalein test revealed an output of 55 per cent in two hours

A blood examination revealed hemoglobin, 78 per cent, erythrocytes, 4,680,000, leukocytes, 6,350

The Wassermann reaction was very strongly positive

Examination by the ophthalmologist revealed a small hemorrhage in the macular region of the left eye

Roentgenoscopy revealed a dense shadow in the left side, the heart seemed pushed to the right, and there was an indefinite shadow in the aortic regions, corresponding to the area of dulness found over the upper part of the chest at the region of the second and third ribs

Treatment and Course—A diagnosis of aneurysm of the arch of the aorta and of pleural effusion was made, and owing to the patient's dyspnea and pain thoracentesis was recommended Aspiration was performed Oct 23, 1915, in the eighth interspace posteriorly, and about 750 c c were withdrawn At this time the patient suddenly collapsed, became almost pulseless and had the appearance of one deeply shocked The fluid removed was pure blood After the patient had recovered sufficiently to permit of an examination, the same physical signs were found as on previous examination

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[1] Goodman, E H Hemothorax Caused by Rupture of a Dissecting Aneurysm, Recovery, The Journal A M A, April 18, 1914, p 1242

Oct 26 1915 the patient died suddenly A necropsy was made the same day by Dr C B Farr, whose report, as it bears on the aneurysm, follows

The left pleural cavity contained 1,900 c c bloody fluid The left lung was almost completely atelectatic. The heart was apparently negative

The whole aorta thoracic and abdominal was irregularly dilated In the first and second parts of the arch the dilatation was cylindric, on the under surface of the third part of the arch was a rounded sac, the diameter of a dollar, filled with formed fibrous clots Below in the lower thoracic portion was a huge hour glass sac with walls of laminated clots fully an inch in thickness There was an extensive tear opening into the pleural cavity on the postero-external aspect A large fairly firm clot found adjacent to the opening suggested that there had been an attempt at repair before the final and fatal rupture Just below the diaphragm was a small saccular aneurysm on the posterior surface of the aorta This had eroded a shallow rounded cavity in the interval between the first and second lumbar vertebrae at the expense of the bodies and intervertebral This cavity was sufficiently large to admit the tip of the thumb The internal surface of the aorta exhibited the usual atheromatous plaques, etc. Sections taken from the wall of the aneurysm were examined for the *Spirochaeta pallida* by Dr Pfeiffer with negative results

Clinical diagnosis ruptured aneurysm of the thoracic aorta with hemothorax.

Anatomic diagnosis dilatation of the arch of the aorta, saccular aneurysms of the descending arch, thoracic aorta and abdominal aorta rupture of the thoracic aorta with hemothorax, erosion of the lumbar vertebrae, atelectasis of the left lung

Through the kindness of Dr C. E Filkins, of the resident staff at the hospital, the accompanying picture of the aorta was made.

COMMENT

It is our belief that at some time prior to admission to the hospital, Oct 20, 1915, and at some time subsequent to his discharge from the hospital, July 15, 1915, rupture of the aneurysm had taken place From his history we gather only one significant lead, and that is, that about six weeks before admission he fainted owing to an unusually severe attack of pain Whether or not the aneurysm ruptured at that time it is impossible to state, but we do know that it must have ruptured at least six days before death, as on admission the physical examination revealed all the signs of fluid, which a subsequent thoracentesis proved to be bloody in nature

We believe we have in this man an instance of two ruptures of an aneurysm, from the first of which the patient recovered, and from the second of which death immediately followed The ordinary course of events in cases of ruptured aneurysm is for death to ensue in a few hours if it is not instantaneous Just how long this patient lived after his first rupture we can only conjecture, but we are certain that at least six days must have elapsed, this being the number of days between the time we first saw him and his death (See pathologic report describing attempt at healing)

248 South Twenty-First Street

Paranoia.—Tanzi says, "Paranoia is a rare form of constitutional anomaly which remains latent for years and manifests itself in mature age in a partial but most persistent delusion which is only the slow and permanent triumph of a perception This perception gradually conquers all evidence to the contrary—and becomes organized into a coordinate system of errors which become the tyrants of the intellectual personality On the other hand, the presence of a circumscribed delusion does not disturb the individual's judgment on other subjects."

PERITONITIS FOLLOWING ACUTE OVARITIS OF ANGINAL ORIGIN

RUSSELL M WILDER, M D
CHICAGO

Hemogenic disease of the ovaries, arising by metastasis from disease of the tonsils or other distant foci of infection, is a condition which is probably far more common than is usually supposed, and may account for some of those cases of peritonitis which, because of their obscure origin, are referred to as idiopathic or primary peritonitis Slavjanski,[1] Pfannenstiel[2] and others recognize the occurrence of ovaritis as a sequel of general sepsis, measles, typhoid, cholera and other infections, but the instances recorded are few and the general tendency of gynecologists is to consider ovarian disease as gonorrheal infection ascending from the lower genital tract

The following considerations suggest that a considerable proportion of diseased ovaries are infected with streptococci rather than with gonococci, that these streptococcus infections are commonly blood-borne from some distant focus, and that certain cases of idiopathic peritonitis are in reality the result of such ovarian infections

Rosenow,[3] by the use of special methods, isolated streptococci in fourteen out of twenty-five ovaries showing chronic and cystic degeneration Riedel[4] has reported nine cases of purulent salpingitis in young girls who were operated on for suspected appendicitis Fructus[5] and others have had a similar experience

It is significant, furthermore, that of all the reported cases of so-called primary peritonitis, a strikingly large proportion have occurred in female patients This is true of primary pneumococcus peritonitis (Dieulafoy,[6] Lenormant and Licene,[7] Michaut[8] and Ehringer[9]), but to a greater extent of primary streptococcus peritonitis Ehringer has collected ten instances, of which eight were in females De la Chappelle[10] found twenty-one cases in the literature, and of these, sixteen were in females, De la Chappelle has reported in addition a series of twenty-three cases of peritonitis occurring during the course of an epidemic of acute sore throat at Helsingfors, and of these twenty-three cases, fourteen, or 61 per cent, were in females A predilection for females so striking as this surely suggests that the sex organs play a significant role in these cases of primary peritonitis, and one wonders on reading over the recorded necropsies that more detailed attention has not been paid to the tubes and ovaries Microscopic examinations are not mentioned, and the absence of gross changes is accepted as sufficient evidence of the normality of the ovaries It is quite possible, therefore, that many such cases were primarily instances of ovaritis or salpingitis, and if this is true it is more than probable that they were metastatic infections from the throat, because in nearly every instance they occurred during the course of a tonsillitis

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[1] Slavjanski Bull Soc. anat 1886

[2] Pfannenstiel in Veit s Handbuch der Gynakologie, iv 63

[3] Rosenow E C The Newer Bacteriology of Various Infections as Determined by Special Methods, The Journal A. M A Sept 12 1914 p 903

[4] Riedel quoted by Fructus (Footnote 5)

[5] Fructus Arch gén de chir 1913 ix 944

[6] Dieulafoy Manuel de pathologoie interne 1911 ii, 667

[7] Lenormant and Licene Rev de gynéc et de chir abd 1905 ix 225

[8] Michaut Thèse Paris 1901

[9] Ehringer Thèse Paris 1906

[10] De la Chappelle Arb a d Path Inst d Univ Helsingfors 1907 ii 583

In a very few of these cases the ovaries were carefully examined and the definite pathologic condition discovered This is true of the reports by Leyden,[11] Kunzel[12] and Schwers [13]

REPORTS OF CASES

Leyden's patient was a girl, aged 20, of previous good health, who fell ill, June 17, with vertigo, sore throat and fever June 22, the general symptoms became markedly worse, and abdominal pains began The patient died, June 28, with all the signs of acute peritonitis Necropsy revealed a liter of purulent exudate in the abdomen, *edema of the ovaries, and reddening and swelling of the abdominal ends of the tubes* The sexual organs were virginal The uterine mucosa showed a gray, pseudomembranous tumefaction, stomach, intestines and appendix were of normal appearance *The tonsils were greatly swollen and congested* No microscopic examination of the tissues was made, and the bacteriology of the infection was not studied, but the edema of the ovaries and swelling of the abdominal ends of the tubes suggests that they were the cause of the peritonitis

Kunzel's patient, Maria B, was brought to the hospital in a state of unconsciousness Subsequently a history was obtained to the effect that she had complained of a sore throat a few days before the beginning of her illness Death occurred on the night of her admission to the hospital, and a necropsy was made The bowel was hyperemic and especially congested in the pelvis In the pelvis were 500 c c of a dark brown fluid mixed with flakes of pus The appendix was only moderately hyperemic The mucosa of the stomach, both large and small bowels and appendix was pale, and showed only slight enlargement of the follicles Remains of menstrual changes were visible in the uterus *The tubes were bright red, especially at their abdominal ends,* where they were distended with mucus and pus On the contrary, their uterine ends were smaller and with small lumens *The ovaries were deeply injected, and covered with a firm membrane Both tonsils were enlarged to the size of walnuts* Cultures from the peritoneal fluid yielded the *Streptococcus pyogenes* "var long," and from the tonsils the same organism From the uterus a *Bacterium coli* and *Micrococcus pyogenes citreus* were obtained

Schwer's patient, a child aged 2, with a grave peritonitis, when first seen had been ill for two days, constipated for twenty-four hours and vomiting for twelve hours The temperature was 40 9 C (105 6 F), the pulse 168 The abdomen was tender and slightly resistant, both on the right and the left sides An appendicular perforation was suspected, and the child was operated on at once A thin nonodorous serous secretion was found in the abdomen There were no adhesions, but some recent fibrinous exudate covered certain parts of the intestines The intestines were everywhere hyperemic, the congestion increasing toward the pelvis, where it attained its maximum at the right tube The appendix and other abdominal organs were intact Death occurred four hours after the operation, and at the necropsy the following pathologic condition was observed an *acute purulent infection of the entire genital tract, vulvovaginitis, endometritis and bilateral salpingitis In addition, small purulent follicles were seen in the tonsils* Bacteriologic examination of the pus removed at the operation gave a pure streptococcus The pus from the vagina contained only streptococci, there were no gonococci The pus from the tonsils was not examined

To these three cases I add a fourth, a personal observation

Ruth B, aged 6 years, was seen, August 19, on account of a sore throat For two days she had felt feverish The bowels were constipated and the appetite was poor, but there was no abdominal pain Examination revealed a temperature of 103 F, a flushed dry skin, dry lips, and a heavily coated tongue The pharynx was hyperemic and the tonsils were large, edematous, hyperemic, and studded with discrete millimeter white patches The lymph glands of the submaxillary region and those of the upper part of the posterior cervical triangles were enlarged and tender In all other respects the examination was negative August 20, the patient showed marked improvement, the soreness of the throat was gone, and the temperature was reduced to 99 F She was not seen on the 21st, but from the mother's report felt perfectly well on this day until evening, when she had two loose bowel movements and complained slightly of pain in the lower part of the abdomen August 22, she was found in a serious condition, with a temperature of 102 F, a rapid pulse, and rapid respiration The abdomen was greatly distended, tympanitic and tender This tenderness was greatest in the lower quadrants, but was *equal on the two sides* There was no vaginal discharge The right shoulder joint was tender but not swollen The condition of the throat had improved The urine contained no albumin or pus A leukocyte count was 28 000, with polymorphonuclears comprising 90 per cent. A diagnosis of peritonitis was made, and although the prospects were unfavorable, the patient was operated on by Dr Dwight Clark At the operation the peritoneum was found hyperemic and lusterless, and in the pelvis was a small amount of thin pus The appendix seemed normal A drain was inserted, but the child died forty-eight hours later

At the necropsy the following conditions were observed The abdomen was distended and tympanitic, the intestines being ballooned with gas A thin, serous, nonodorous exudate occurred in small amount in the pelvis Both the parietal and the visceral layers of the peritoneum were very slightly hyperemic over the upper half of the abdomen, but were more intensely injected over the lower half and an angry red in the pelvis A membranous gelatinous exudate 1 to 2 mm thick occurred in the folds of the mesentery and covered part of the floor and walls of the pelvis The intestines showed no perforation, no volvulus and no diverticula The cecum and appendix were slightly hyperemic, but with this exception appeared normal The mucosa of the stomach and bowel appeared normal The mesenteric lymph glands were uniformly enlarged and hyperemic Liver, spleen and kidneys showed extreme cloudy swelling, but were otherwise normal The gallbladder appeared normal Microscopic examination of the ovary, tubes and uterus revealed in the tubes and uterus an extreme degree of hyperemia but no hemorrhages In the lumen of the tubes there was no exudate In that of the uterus was a small collection of leukocytes, half of which were mononuclears *The ovaries showed, in addition to passive congestion, small hemorrhages, and in the ovarian tissues a few diplococci with short chain streptococci were found* Cultures of the abdominal fluid obtained at operation resulted in the pure growth of gram-positive noncapsulated diplococci and short chain cocci belonging to the streptococcus group The organism appeared on blood agar as a small, circular, moist colony, gray, and producing marked hemolysis Its growth was best under anaerobic conditions Inoculation into rabbits gave negative results [14]

This case bears a striking resemblance to those of Leyden, Kunzel and Schwers In all an ovaritis is suggested by the pathologic reports, and in my patient the anatomic diagnosis of ovaritis is certainly justified by the minute hemorrhages and the presence of diplococci in the ovarian tissues In all four cases an associated angina suggests that the throat was the portal of entry of the infection In all four cases a peritonitis developed In all, the sequence of events seem to have been acute sore throat, later ovaritis and then peritonitis

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[11] Leyden Deutsch med Wchnschr, 1884, x, 258

[12] Kunzel München med Wchnschr, 1904, li, 1920

[13] Schwers Arch de med d enfant, 1914, xvii, 441

[14] For this description of the organism and for the report of the animal inoculations I am indebted to Dr F W Gaarde, and for the microscopic sections to Dr B O Raulston

It is to be regretted that the other reported cases of so-called primary peritonitis did not have more attention directed to the state of the ovaries, as it would seem probable that acute hemogenic infection of the ovaries was the explanation of the peritonitis in many of them, and it is to be hoped that in all future cases of supposed idiopathic peritonitis the possibility of a hemogenic ovarian infection will receive consideration

Presbyterian Hospital

Special Article

WHAT THE CIVILIAN DOCTOR CALLED TO ACTIVE SERVICE WITH THE ARMY SHOULD KNOW

(Concluded from page 509)

III DUTIES IN THE ZONE OF THE ADVANCE

In this zone can be expected to occur most of the casualties due to contact with the enemy While still concerned with sanitary measures, the medical officer is here more occupied in rendering first aid and in the evacuation to the line of communication of the wounded In a brief summary of these subjects in such an article as this it is impossible to do more than outline the duties of the medical officers in this zone and to refer to the authorities who instruct in the details

There will be considerable difference in the sanitary service performed with troops fighting a war of position, as on the western border of France today, or with troops fighting field engagements and moving a number of miles from day to day either in advance or retreat, however, the units with which these duties must be performed are the same in either case

First aid to the wounded and the collection of them begins with the regimental service, in other words, the sanitary troops assigned to duty with a regiment are here employed As circumstances permit, the wounded are given first aid, collected by litter bearers and moved back, when practicable, to the aid stations of their own organizations The position of these depends on many factors, and a discussion of them would demand a short article in itself From here they are sent on to dressing stations, established under the order of the division surgeon or the director of the ambulance companies These stations are part of the ambulance companies and, consequently, are supplied with wheeled transportation which is used to transport to the rear those requiring it, after the wounded have been examined and sorted over

Ordinarily these ambulances carry their patients to field hospitals, which are hospitals only in name, and are really collecting stations at which further examination and care may be given to the wounded How thorough this may be depends on military exigency and the number of wounded passing through them They are not supplied with beds, and it is not expected that their patients will remain in them for more than a very short period of time

The war of position in France has developed a new unit—in reality a flying surgical hospital of a capacity of 100 patients, manned by a staff of expert operating surgeons, the equipment carried on four motor trucks It is planned that on two hours' notice this unit can travel 20 miles and have its operating room and ward set up ready for work It is proposed to treat here only those wounded who are too severely injured to endure transportation, and those for whom immediate surgical interference is necessary in order to save life From the field hospital, which is a divisional organization and which is highly mobile, and is expected constantly to accompany the division to which four of them are assigned, a patient, as promptly as possible, is sent to the evacuation hospital

With the greater numbers involved in the present European war, even these evacuation hospitals are hospitals only in name indeed, the English have recently changed the name from "evacuation hospital" to "casualty clearing stations," as, when possible, the patients were sent on to more permanent hospitals, and finally to the general hospitals previously referred to, where patients are cared for who cannot expect to return to the colors within a considerable period of time, if at all The evacuation hospitals, as previously stated, are, strictly speaking, in the line of communications, in conjunction with the field hospital it is the station for the final treatment of only the slightly wounded

In this organization of the medical force a plan has been attempted to provide highly mobile units, such as the ambulance companies of the field hospital companies, which keep up in the field with the division to which they are assigned In a way these units with the station for the slightly wounded act as sieves which sift out the disabled who may be expected to return at once or within a few hours to the fighting line, to determine those who within a day or two, provided the troops are not moving forward, may be expected to rejoin, and finally to let through to the line of communications for further care and examination those for whom the division cannot hope for speedy return

For those medical officers on duty with hospitals or stations for the slightly wounded, whether the former are in the zone of the advance or on the line of communications, are added the responsibilities of providing food for the patients whom they may have in their charge While this is supplied through the quartermaster's department, and partly by the medical department, responsibility, nevertheless, rests on the medical officer to see that it is done Indeed, some of the worst trials borne by disabled soldiers have been not so much the wounds suffered as hardships because of lack of food and shelter

The point should be urged that the duties of medical officers on the line of communications and in the zone of advance cannot be performed satisfactorily in time of war without special training It is not sufficient that a medical officer be professionally competent, or indeed a skilled specialist, to meet successfully the demands on him in the field A line officer might individually be an excellent marksman but fail wofully in the administration of a line unit through lack of experience

The conditions of no war have been met without avoidable suffering to the wounded Even in the highly organized armies of western Europe, where it would seem that all possible forethought had been exercised and all preparation made, the wounded have often died because of the inadequacy of an organization to care for them

To the skeptical who do not agree with the necessity of preparedness in this particular field, we would invite their perusal of the following official document, and in doing so remind them that it is dated more than one year after the beginning of the Civil War The letter is written with reference to the battlefield of Second Bull Run and *ten days* after it opened, sorrowful to relate, it effected nothing in the way of the organization asked for

> Surgeon General's Office,
> Sept 7, 1862
>
> Honorable Edwin M Stanton,
> Secretary of War
>
> Sir —I have the honor to ask your attention to the frightful state of disorder existing in the arrangement for removing the wounded from the field of battle The scarcity of ambulances, the want of organization, the drunkenness and incompetency of the drivers, the total absence of ambulance attendants are now working their legitimate results, results which I feel I have no right to keep from the knowledge of the department The whole system should be under the charge of the Medical Department An ambulance corps should be organized and set in instant operation I have already laid before you a plan for such an organization, which I think covers the whole ground, but which I am sorry to find does not meet with the approval of the general-in-chief I am not wedded to it I only ask that some system may be adopted by which the removal of the sick from the field of battle may be speedily accomplished and the suffering to which they are now subjected be in future as far as possible avoided
>
> *Up to this date six hundred wounded still remain on the battlefield* in consequence of an insufficiency of ambulances and the want of a proper system for regulating their removal in the Army of Virginia Many have died of starvation, many more will die in consequence of exhaustion and all have endured torments which might have been avoided
>
> I ask, sir, that you will give me your aid in this matter, that you will interpose to prevent a recurrence of such consequences as have followed the recent battle, consequences which will inevitably ensue on the next important engagement if nothing is done to obviate them I am, sir, very respectfully,
>
> Your obedient servant,
> William A Hammond,
> Surgeon General

If this was true after more than a year's fighting, it undoubtedly would be true, as has been demonstrated recently in Europe, of the first months of any war that involved several hundred thousand troops, unless we forestall such emergencies by adequate medical arrangements

The interest, then, being shown today by the medical profession of the United States in adequate training and numbers of medical officers is warranted by our past history and by present history in Europe Such civilian members of the profession as are devoting time to this subject are performing not only a patriotic duty but also a duty to humanity[1]

Certain physical and mental qualifications are at present demanded of physicians entering the Medical Corps of the regular army, and even in time of war it is probably best that they remain as fixed at present They are to be found in Circular of Information, Form 132, War Department, Surgeon General's Office, April 26, 1912

The physical requirements are about those demanded of recruits, except that the standards of vision are not so exacting Local boards for conducting these examinations are convened from time to time, as required, at the larger military posts, usually during the months of January and July

The examination consists of two parts — the preliminary examination and the final, or qualifying, examination, with a course of instruction at the Army Medical School intervening The mental examination is written and embraces the following subjects

Anatomy, physiology and histology, chemistry and physics, materia medica and therapeutics, surgery, practice of medicine, obstetrics and gynecology It takes nearly a week to conduct

Successful applicants are usually then placed on temporary duty as active members of the Medical Reserve Corps, and at the proper time brought to the Army Medical School at Washington, D C, for special instruction lasting eight weeks, at the end of which time the qualifying examination is held This examination covers the instruction given and is practical as well as written If successfully passed the officer is commissioned in the Medical Corps of the regular army

However, in times of national emergency, when large numbers of troops must be used, the services of many physicians will be needed in the zone of the interior, and here those who are at an age at which field service would be too exacting, and others who are incapacitated physically for severe and prolonged effort, may be employed with advantage Indeed, any competent medical men who are able to carry on active practice in civil life could meet the demands of duty at base and general hospitals which the government will have to establish in numbers There is also a demand for all specialties in the hospitals of the zone of the interior, and for many general surgeons with special surgical units Under these circumstances, the examination for medical officers to obtain commissions would be such as may be prescribed by the Secretary of War, and probably would be physical and oral In fact it can safely be stated that under these conditions great weight will be given to the reputation and standing of the doctor in his community Credible reports indicate that the Austrians have provided hospital accommodations on the basis of 40 per cent of the number of troops employed This means that the service of every Austrian physician must be utilized to a greater or less extent by the military authorities Indeed, it has been reported that in some places it has been difficult for civilians to secure medical attention, so general was the demand by the military authorities for medical service

The number of medical officers of the regular army authorized by law is 444 This number was fixed by Congress on the reorganization of the Medical Department in 1909, and was the allowance for an army of 65,000, which was the size of the United States Army at that time It is necessary to employ now about 100 civilian physicians either as contract surgeons or as Medical Reserve surgeons to assist in performing the required duties in the army, which now numbers about 100,000

Authorities consider that in time of war medical officers should be in the proportion of 1 per cent, that is, a thousand medical officers for every 100,000 troops About half of these would be with the troops in the field, and the other half would be necessary to care for the sick and wounded on the line of communications and for duty in the hospitals and mobilization camps in the zone of the interior

Plans are under way for holding, during the coming summer, camps of instruction for medical officers of the National Guard and of the Medical Reserve Corps at Anniston, Ala, Tomyhanna, Pa, Sparta, Wis, Fort Riley, Kan, and Monterey, Calif

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[1] Books to be consulted Straub Medical Service in Campaign, Ed 2, United States Field Service Regulations, 1914 Morrison and Munson Study of Troop Leading and Management of the Sanitary Service in War

Therapeutics

AURICULAR FIBRILLATION

That this condition should receive immediate attention, and that digitalis in large doses is of marked benefit in most cases, at least for a time, are generally recognized

The prognosis depends on the condition of the heart muscle If the myocardium is intact, this peculiar nervous upset, the heart having lost its governor, so to speak, will be rapidly and more or less permanently cured by digitalis through the stimulation by this drug of the vagus nerves, thus causing normal inhibition and a consequent slowing of the heart

Although such a patient may have been incapacitated, he may not yet have acquired a dilated heart, consequently, he will not need the digitalis long continued If, through some kind of heart strain, he has a recurrent attack of fibrillation, he must again receive digitalis On the other hand, if a patient who has auricular fibrillation also has dilatation, caused either by prolonged heart tire or from the fibrillation, or if the fibrillation is superimposed on an already dilated heart, while the digitalis (if not already given in large doses) will stop, or at least greatly improve the fibrillation, still the dilated heart must be treated as such, namely, by rest, digitalis and other careful regimen, that is, careful diet, gentle catharsis, and other general measures If the fibrillation is caused by the dilatation, the prognosis, with digitalis and rest, is good If the fibrillation is superimposed on the dilatation with a chronic myocarditis, the prognosis is bad under any treatment

White[1], after studying 200 heart cases, finds that auricular fibrillation and alternating pulse, as well as heart block, are more frequent in men than in women, and both auricular fibrillation and alternating pulse are more likely to occur after 50 years of age than before Auricular fibrillation may be a symptom developing in hyperthyroidism, in cardiac sclerosis, in syphilitic hearts, and rarely in rheumatic hearts Excessive use of tea and coffee can cause the condition, and occasionally the cause may be tobacco

Hering[2] finds that ventricular fibrillation may be the main factor in sudden death from angina pectoris

TREATMENT

The treatment of auricular fibrillation is rest, digitalis, and a diet of nonstimulating food, in small bulk, given three or four times in twenty-four hours The stomach should not be distended to press on or irritate the heart Tea, coffee, alcohol, strychnin and any other nervous stimulant should be prohibited

The dose of digitalis (the preparation must be a good one to be of value) should be large to act properly and positively on the vagus nerves In the case of auricular fibrillation the heart should be slowed, but it is not especially advisable (unless the heart is dilated) to increase its muscular power, although of course the ventricles will unavoidably be stimulated As in turning on the power of any engine or machine, the full dose of digitalis should not be given at first, the heart should not be shocked Tincture of digitalis should be given in ascending doses, on the first day, 5 drops after breakfast, 10 drops after luncheon, and 15 drops after the evening meal On the second day the dose should be 20 drops after breakfast If the heart is not markedly slowed, 25 drops should be given at noon, but none at night on this day If the heart is still not slowed to at least 90 beats per minute, 30 drops should be given on the morning of the third day

In from thirty-six to forty-eight hours from the beginning of the treatment, the heart should be beating at the rate of from 80 to 90 times a minute, and all cardiac distress should have disappeared The digitalis should then be given twice a day, in more or less rapidly diminishing doses, depending on the symptoms, and it should thus be continued for one or two weeks

It should be emphasized that the proper dose of digitalis is "enough" to do the work With a strong preparation the beginning dose should be small, with a weaker preparation larger doses should be given from the start The limit of dosage is the result obtained It should be remembered, however, that digitalis is very slow to act, and that it is very slowly eliminated, so that large doses must not be long continued, lest a bad effect, that is, a cumulative effect, be produced on the kidneys

If there is kidney insufficiency, or if the output of urine becomes much lessened in amount, digitalis should be immediately stopped, and should not be again given for several days If, after there is improvement in the fibrillation and the pulse has become markedly diminished, infrequent cardiac pains occur, too much digitalis is being given

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[1] White Boston Med and Surg Jour Dec 2 1915
[2] Hering Munchen med Wchnschr, Nov 2 1915

PULSUS ALTERNANS

Instead of this being an unusual condition, White[1] shows that it is not infrequent, as demonstrated by graphic pulse tracings He found it present in seventy-one patients of 300 examined

Pulsus alternans is "that condition of the pulse in which strong and weak beats alternate, but in which the cardiac rhythm is normal " The alteration may be constant, or it may occur in phases

He finds this character of the pulse to occur in about one third of all cases of decompensation About half of the cases show increased blood pressure, 160 mm or more, and 62 per cent of the cases were in patients over 50 years of age, and 69 per cent were in men Arteriosclerosis is a strong factor, and necropsies on patients who had had this symptom in life showed coronary sclerosis and arteriosclerotic kidneys

The prognosis as to length of life in patients who have this condition is not good Digitalis and rest in bed improve the general condition of the majority of patients, but White found that in only four patients out of fifty-three so treated was the pulsus alternans either "diminished or banished " The administration of digitalis in cardiac deficiencies does not cause the condition of pulsus alternans

This interesting symptom in heart cases, as White has shown, is of considerable prognostic value, but it can be positively determined only by some graphic means of registering the pulse

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[1] White Am Jour Med Sc., July, 1915 p 82

Low Grade Infection and Hygiene—To guide individuals so that they may be not only protected from the incidence of insidious, low grade infection, but also rendered resistant to micro-organisms which, in nature of things, must inevitably gain entrance to their bodies, requires a close study of the new science of personal hygiene and a painstaking effort to apply its principles—Eugene Lyman Fisk, M D

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SATURDAY, FEBRUARY 19, 1916

THE SIGNIFICANCE OF FERMENTED MILKS

As fermented milks of diverse sorts have come into use not merely as foods but also as products of reputed therapeutic and prophylactic value, physicians should have a clear understanding of their manufacture and chemical nature In many of the larger cities, special fermented milk preparations can be obtained under various trade names which supplant the more familiar terms buttermilk, kefir, koumiss and yoghurt The latter types, however, include the most important varieties that are well known, so that an understanding of their origin ought to give a fairly clear appreciation of the possibilities in this field[1]

Almost every one who has had any acquaintance with farm life or dairy products knows the process leading to the production of buttermilk as a by-product in butter making It is not so generally appreciated, however, that in recent years much of the so-called buttermilk sold for human use in this country is prepared by fermenting skimmed milk, which remains as a by-product of the cream trade It is simply soured skimmed milk which has been churned or stirred in order to break up the curd The same product is sold also under the name of "ripened milk" The souring of milk or cream is brought about by the activity of certain bacteria which form lactic acid by decomposing the milk sugar (lactose) The ability to form acid from lactose and other sugars is possessed by many kinds of bacteria, but is so characteristic of a certain group that they are commonly spoken of as the lactic acid bacteria Such fermented milk, though not literally buttermilk, is scarcely distinguishable from the latter, and may be even richer in actual nutrients This beverage can now be made in the home if good buttermilk is not a readily purchasable commodity in the community

The conspicuous fermentation product in buttermilk, as in the other varieties of fermented milks, is lactic acid In some types alcoholic fermentation may also be prominent, so that alcohol and carbon dioxid are added to the milk mixture The reaction whereby an alcoholic is added to the ordinary acid fermentation is due to yeasts

One of the first of the fermented milks known to Europeans was the kefir, made from the milk of sheep, goats or cows in the Caucasus Mountains and neighboring regions Kefir differs from most of the fermented milks of the Mediterranean countries in that it is made from a dried preparation and contains considerable quantities of alcohol and gas According to an expert of the Bureau of Animal Industry, it is probable that kefir is produced under different circumstances by different organisms Any combination of bacteria or of bacteria and yeasts that will produce a lactic acid and a mild alcoholic fermentation in milk will make kefir, although to secure the most desirable flavor certain organisms may be essential Kefir grains, which start the proper fermentation, cannot ordinarily be obtained in this country, but a good imitation of kefir can be made by carrying on simultaneously in sealed bottles an alcoholic and a lactic fermentation Better results can be obtained by inducing the alcoholic fermentation in buttermilk Ordinary bread yeast may be used for alcoholic fermentation, but as this yeast does not ferment lactose, it is necessary to add cane sugar to the milk

Koumiss, in its original sense, was a fermented beverage prepared from mare's milk Unlike kefir, there is no dried "ferment," "seeds" or "grains" with which the fermentation of the mare's milk is started Native koumiss makers lay great stress on the quality of the milk, the breed of the mares, and the condition of the pastures, but it is probable that their troubles ascribed to variations in these conditions are more likely attributable to imperfectly controlled bacteriologic factors According to Rogers,[1] the koumiss which is often made and offered for sale in this country is usually made from cow's milk, and therefore, more correctly, is kefir

Kefir and koumiss are limpid, mildly acid, and distinctly alcoholic, yoghurt, leben and matzoon are thick-curdled milks, decidedly acid, with very little or no alcohol Different organisms are involved in the fermentation In some of the "yoghurt buttermilk" now sold in this country, the results are obtained with a combination of the essential *Bacterium caucasicum* and an ordinary lactic acid organism such as is used in making buttermilk Yeast is a contamination, not a desired component, if present in this case

These fermented milks have attracted attention in recent years, not primarily because of their food value, but because of inherent specific peculiarities of composition and texture For example, it is believed by many that the finely divided casein as it occurs precipitated in these preparations is more easily digested than the curds formed in the stomach after drinking ordinary milk The proteins and fats of these beverages are not materially changed by the micro-organisms, but the lactic acid has been credited with favorable influences in the alimentary tract The most prominent claim of the fermented-milk therapy widely heralded in popular magazines directs emphasis on the possibility of establishing the acid-producing bacteria in the intestinal canal to suppress the putrefactive type To what extent there is a probability of establishing conditions there under which they will multiply and persist, while the objectionable types are driven out, has been previously discussed in The Journal [2] The situation is summed up by Rogers[1] by saying that while there is no conclusive evidence that *Bacillus bulgaricus* is able to establish itself in the intestines in such a way that other bacteria are driven out, it is undoubtedly true that in many cases marked improvement has resulted from the ingestion of milk cultures made from it It is by no means certain, however, that the results which have been obtained by the use of milk cultures have been attributable to any peculiar virtue in the organism itself It has been held by some investigators that the intestinal flora may be radically changed by a fundamental change in the diet The beneficial effect of a sour-milk diet is attributable, perhaps, not so much to the bacteria contained in the milk as to the milk itself, which provides material for an acid fermentation in the intestines

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[1] The subject is reviewed by L A Rogers (Fermented Milks, Bull 319, U S Dept Agric, Jan 10, 1916), on which some of the statements here made are based Copies of the publication may be procured from the Superintendent of Documents, Government Printing Office, Washington, D C, at 5 cents a copy

After all, the fermenting of milk is a means of preserving it without undesirable types of decomposition, and in a form wholesome and agreeable for human consumption There are without doubt patients for whom the presence of soured milks in contact with the alimentary mucosa would not be acceptable, yet fermented milks are so well tolerated in many cases that their use should in general be encouraged from the standpoint of nutrient values, and welcomed quite apart from the "autointoxication" therapy program

MEDICAL PREPAREDNESS AND THE ARMY

Republics are proverbially forgetful, in them lessons learned by bitter experience have only a transient influence The Spanish-American War occurred less than twenty years ago In this war, the most dangerous enemy which our soldiers had to meet was not the Spaniards but disease in our own camps The records of the War Department show that in 1898, out of an army of 200,000 men, there were 21,000 cases of typhoid fever with 2,192 deaths, and that the Second Division of the Seventh Army Corps, encamped at Jacksonville, Florida, in 1898, had 2,693 cases of typhoid with 248 deaths out of only 10,759 men Nor were such results surprising when one recalls the conditions existing at the beginning of the war The machinery of the small regular army in existence at that time had suddenly to be expanded to fit a large army of volunteers The size of the staff proved entirely inadequate to the task There were not enough trained military surgeons in the country to care properly for the soldiers Lack of medical supplies, inability to deliver supplies at needed points, lack of familiarity on the part of civilian surgeons with military methods, hospitals without proper equipment, surgeons with little or nothing with which to work, sick men without proper care or suitable nourishment — these were some of the occurrences which should have taught, for all time, the necessity of a trained force of men, skilled in surgery and familiar with army routine, to care for the sick and wounded in future wars Yet what are the facts?

In less than ten years after the Spanish war the President in a special message to Congress stated that the medical corps was not only much smaller than was needed for the regular army in times of war, but was too small even to perform the duties demanded of it in peace The long fight from 1904 to 1908 for the reorganization of the Army Medical Corps must surely be fresh in the minds of most of our readers, if not of the public In the spring of 1908, Congress finally passed the army medical reorganization bill, providing 443 medical officers for an army of about 65,000 men, a ratio of seven medical officers for each thousand men, the proportion which had been recommended by the surgeon-general's office and which is accepted by military and sanitary experts generally as the minimum ratio This law is still in force In the meantime, the army has been increased by congressional enactment to over 90,000 men, an increase of nearly 50 per cent For this increased army not a single additional medical officer has been provided As stated by Surgeon-General Gorgas before the House Committee on Military Affairs, "Our relative number of trained medical officers is not as great now as it was at the beginning of the Spanish war We then had seven per thousand, now we have about five per thousand"

In the face of these facts and with the memory of our inexcusable loss of life from disease in the Spanish war, it is difficult to understand why, in the numerous bills now before Congress for preparedness and national defense, not one of them provides for increasing the Medical Corps of the army, even beyond its present inadequate condition, to say nothing of providing for a medical staff in any way commensurate with an army of sufficient size to be effective for national defense One bill increases the army to 140,000 men, another provides for an increase of 75,000 men, one bill in the Senate, it is true, provides for an army of 210,000 men with a medical service of 898 officers, but this is an actual reduction in the proportion of medical officers to 4 28 per thousand In none of the bills now pending is there any evidence that the medical and sanitary needs of the army have been given adequate consideration Yet the military experiences of the entire world during the last twenty-five years demonstrate clearly that an adequate, well-equipped, well-trained medical service is of the most vital importance to the effectiveness of any military plans While this has long been recognized as true, it is today, with our vastly increased knowledge of disease prevention and modern sanitation, of far greater importance than ever before No matter how capable a surgeon may be in civil life, he cannot be converted into a competent and effective army surgeon over night

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[2] The Survival of the Bacillus Bulgaricus in the Alimentary Tract, Current Comment The Journal A M A Oct 2 1915 p 1191

The army medical officer must have scientific training and experience, plus training in military methods, camp sanitation and the proper care of large bodies of men in the field He must be prepared to solve the various problems peculiar to military life As stated above, the minimum should be seven medical officers for each thousand men, and this ratio should be maintained no matter to what size the army may be increased The present medical corps, carefully selected and highly trained as its individual members are, is too small even to do the necessary work in times of peace General Gorgas states that there are, in readiness, hospital and medical supplies for an army of 300,000 men, but that it would take time to train a sufficient number of medical officers for such an army If the harrowing and disgraceful occurrences of the Spanish-American War are not to be repeated, and if we are to profit by the bitter experience of the past, then any plan for enlarging the army, whether by regular enlistment, volunteers, compulsory service or what not, must provide for a corps of trained medical men capable of safeguarding the health of the army

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RECENT EXPERIMENTS RELATING TO THE ENDOCRINE GLANDS AND DEVELOPMENT

Among all the recent observations destined to direct attention to the possible relations of some of the ductless glands or organs with endocrine functions to the growth and development of individuals, few have presented more striking phenomena than those reported by Gudernatsch[1] His exceptional experiments indicated, briefly, that if thyroid is fed to young tadpoles, development in the sense of a rapid differentiation of the parts proceeds with extreme rapidity, so that apparently perfect frogs of minute size speedily result This differentiation in a developing vertebrate organism may be so rapid that within eighteen days after hatching, a stage is reached which would ordinarily require many weeks for its attainment Thymus, on the other hand, had the power to stimulate growth, while lacking that of exciting differentiation, so that thymus-fed tadpoles experience a rapid growth but fail to be brought to metamorphosis within the usual period

Abderhalden[2] of Halle has extended the use of this method of investigation for the purpose of ascertaining the nature of the active substances present in physiologically potent glands and tissues He has confirmed the contentions of Gudernatsch[1] and of Romeis[3] respecting the potency of animal tissue extracts on the development of certain species Abderhalden's experiments bring the added evidence that the substances responsible for these unique and almost startling effects are not to be identified with the proteins or their more complex derivatives, for even after prolonged digestion of thyroid and thymus tissue to the stage at which the usual protein test fails, the products are still potent when tested on tadpoles From a quantitative standpoint very small amounts of substance suffice to bring results To the physiologic chemist there is some significance in the fact that the active "principles" are readily diffusible after the digestions

Other organs have been drawn into the field of study, and by the use of combinations of the digestion products of thymus, thyroid, pituitary and ovarial substance, bizarre results have been noted To quote these in detail, to recite the varied distortions of form and manifestations of disproportionate growth or development might merely lead to inadvisable or untenable analogies Speculation should not be stimulated to the point at which therapeutic possibilities are suggested with unjustified readiness The fact that complete digestion with gastric, pancreatic and intestinal ferments does not destroy the particular potency of the gland substances under discussion may, however, have a bearing on the use of organic extracts in human therapy It helps to furnish a probable explanation of the fact that many gland preparations, such as the unaltered dry substance of the thyroid, is confidently believed to exhibit pharmacologic responses even when administered by mouth Evidently some of the "active principles" are not destroyed in the course of alimentary digestion Up to the present time the attempts with salts of various inorganic elements to reproduce the characteristic effects brought about by thymus and thyroid substance have failed

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[1] The Thyroid and Thymus in Relation to Development, editorial, The Journal A M A, July 4, 1[illegible]4, p 34

[2] Abderhalden, E Studien über die von einzelnen Organen hervor gebrachten Substanzen mit spezifischer Wirkung, I, Verbindungen, die einen Einfluss auf die Entwicklung und den Zustand bestimmter Gewebe ausüben, Arch f d ges Physiol, 1915, clxii, 99

[3] Romeis, B Experimentelle Untersuchungen über die Wirkung innersekretorischer Organe, II, Einfluss von Thyroidea und Thymus fütterung auf das Wachstum, die Entwicklung und die Regeneration von Anurenlarven, Arch f Entwcklngsmechn d Organ, 1914, xl, 571, Der Einfluss verschiedenartiger Ernahrung auf die Regeneration bei Kaulquappen (Rana Esculenta), I, ibid, 1913, xxxviii, 183 Cotronei, O Prémiere contribution expérimentale à l'etude des rapports des organes dans la croissance et dans la metamorphose des amphibies anoures L'influence de la nutrition avec la thyreoide des mammifères, Arch ital de biol, 1915, lxi, 305

A REPORT ON TOMATO KETCHUPS

The Department of Agriculture of Pennsylvania has recently issued an interesting bulletin[1] on "Tomato Ketchups" The report is made by Prof Charles H LaWall, chemist to the Dairy and Food Bureau, based on analyses which he and Leroy Forman have made In April and May, 1915, on an order from Food Commissioner Foust of Pennsylvania, 142 samples of tomato ketchup were collected in the state of Pennsylvania These represented 135 different brands The samples were examined to determine the total solids so as to give a basis for comparison from the standpoint of actual values expressed in the form of dry material The total soluble-solids also were determined, these giving an idea as to the cellular tissue contributed by the pulp, spices, etc The volatile acids, expressed as acetic acid, were found for the purpose of studying this point as a factor in connection with the question of the presence or absence of preservatives The character of the color of the various products, whether natural or artificial, a search for saccharin and preservatives, with an estimation of each and a tabulation of the results of a microscopic examination, completed the details of the investigation

The bulletin gives a list of the brands examined, together with the statements of essential facts that appeared on the labels The data obtained in the investigation are analyzed, and furnish much interesting and valuable information *It is shown that the price of ketchup is almost as variable as the names of the various brands, varying from 4 ounces for ten cents to 7½ ounces for five cents* The average price of each ounce of ketchup examined was one cent The amount of solid matter in the ketchup shows even greater variation than the price

One fact to which the bulletin calls particular attention is that not one of the 142 samples contained any artificial color This is a marked improvement over the results reported by the Connecticut investigation made five years ago, when 12 per cent of the samples were found to be artificially colored

Even more remarkable is the fact that while the investigation of 1910 showed that ninety out of every hundred preparations contained chemical preservatives, the Pennsylvania report shows that today 76 per cent contained no chemical preservatives The 24 per cent that contained preservatives had, in every instance, benzoic acid (added in the form of sodium benzoate) *In no case was any preservative found in products claimed to be free from it* In discussing the chemical preservative question, the bulletin states that it is probable that the underlying cause of the marked improvement with respect to preservatives is "the fact that manufacturers have found it cheaper in the end to maintain sanitary conditions and effect, through sterilization of the product, the desired end, than to depend on the uncertain and questionable efficacy of a preservative"

The report further declares that the number of manufacturers who use preservatives is likely to be still further decreased if the European war continues Sodium benzoate, which before the war sold for less than fifty cents a pound, now sells for more than five dollars a pound, in fact, at the present time "the cost of the sodium benzoate in a pint bottle of ketchup is nearly as great as the cost of the tomatoes present" It may be agreed that "the sodium benzoate controversy bids fair to be settled in a most interesting and unexpected manner"

The ketchup manufacturers who in the past have defended the use of sodium benzoate have advanced as one of their stock arguments the claim that where sodium benzoate is not used it is necessary to use large and even injurious amounts of vinegar or acetic acid and spices in order to preserve the ketchup The Pennsylvania report shows that "so far as the spices are concerned there appears to be no essential difference between the samples containing preservatives and those without" In the matter of acidity the report discloses an interesting state of affairs The average acidity of all samples containing sodium benzoate was 1 19 per cent calculated as acetic acid The average acidity of those that contained no sodium benzoate was 1 43 per cent In other words, there is less than *one-fourth of one per cent difference in the acidity of the two classes of ketchup* As the Pennsylvania chemists point out, this effectually disposes of the contention that a high acidity is necessary in ketchups that are not chemically preserved

Not one of the specimens of ketchup examined by the Pennsylvania authorities was found to contain saccharin The report will do much to strengthen the confidence of the public in a food product whose use is well nigh universal

THE BEHAVIOR OF THE UTERUS AND OTHER ORGANS TOWARD MORPHIN AND SCOPOLAMIN

In "The Pharmacology of Useful Drugs," by Hatcher and Wilbert, recently reprinted from the columns of THE JOURNAL,[1] occurs the following in reference to the morphin-scopolamin narcosis, abandoned by the majority of operating surgeons because of numerous attendant fatalities, but recently exploited in a sensational manner as a preliminary to childbirth

> Effective doses are not very dangerous to the mother, in the hands of those who have mastered the difficult technic of its use, but labor is frequently prolonged by its use, and the death rate among the new-born from asphyxia is certainly higher than with other methods in the hands of the general practitioner

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[1] Tomato Ketchups Bull 272, Department of Agriculture, Dairy and Food Bureau Harrisburg, Pa

[1] Hatcher R A., and Wilbert M I. Pharmacology of Useful Drugs Chicago 1915 p 71

In this case, as has often happened in the history of medicine, the empiric use of drugs has preceded their more exact investigation

One might naturally expect that in these days of scientific research, the systematic clinical use of a potent if not actually dangerous drug would be based on or at least fortified by some definite and adequate knowledge of the pharmacologic behavior This cannot be said to have occurred in the exploitation of "twilight sleep" The staunchest supporters of this method of anesthesia admit that morphin and scopolamin, even in small doses, may prolong labor Thanks to researches in the pharmacologic department of the Yale University School of Medicine, encouraged by the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association, and to other recent studies, more accurate information of the action of morphin and scopolamin on the uterus is now available[2] Studies of the combined action of these drugs on the central nervous system indicate that this mixture exhibits a true synergism, that is, the narcotic effect of the combination has appeared more profound than the algebraic sum of the effects of the same doses given separately Smith,[3] working in the pharmacologic laboratory of the University of Michigan, has attempted to determine whether the synergism of morphin and scopolamin is limited only to their narcotic effects, or whether it is more general in scope For this purpose, experiments were made on intact frogs, and then the effect of the combined drugs on the cardiac functions was studied by perfusion of the isolated frog's heart as well as on warm blooded animals It appears, according to Smith, that the scopolamins are synergistic with morphin in the frog, and likewise in the mouse, in the latter case probably through their combined action on the respiratory center A synergistic action is also shown in the case of the frog's heart The toxicity of the scopolamin-morphin combination in the mouse is increased with the relative increase of the scopolamin content of the combined dose In such cases the levorotatory scopolamin is more toxic than is the inactive scopolamin or atroscin

In the case of the direct action of these drugs on the isolated uterus, no synergism or antagonism has been discovered by Barbour[2] In experiments on animals decerebrated so as to exclude the participation of the central nervous system in the responses to the drugs, Barbour found that neither morphin nor scopolamin causes profound changes in the activity of either the pregnant or nonpregnant uterus A temporary increase in tone is often seen after the use of both drugs If the drugs produce a marked depression of the circulation, a relaxation of the uterus may result indirectly Barbour therefore concludes that the statement that large doses of these narcotics inhibit the activity of the uterus is not applicable to any direct action of morphin or scopolamin on this organ The delay in labor produced by either or both of these drugs is probably due entirely to their cerebral action This valuable information points the way to combat in a rational manner some of the difficulties that are liable to arise when the morphin-scopolamin anesthesia is employed in practice

PAWLOW

When it was announced about eleven years ago that the Nobel prize had been awarded to Ivan Petrovitch Pawlow, professor of physiology in the Military Academy of Medicine at Petrograd, in recognition of his work on the physiology of digestion, few knew of his work or why the prize was awarded to him At that time Pawlow had over twenty-five years of his prolific career in biology behind him, but his "Work of the Digestive Glands" in a summarized form, available for those not versed in Russian, had only just been published On another page[1] appears an announcement of his death and a short biographic notice

When Pawlow was called, in 1890, to take charge of the physiologic division of the new institute for experimental medicine in Petrograd, he was afforded an opportunity to fit up a laboratory for investigations in digestion He had long recognized the great objections to "acute" experiments as a means of studying the digestion processes His studies had already given him an appreciation of the influence of traumatic and psychic factors in the activities of the digestive organs He had learned that to approximate the truth about the physiologic activities of the digestive glands by experimentation, the normal relations of the blood and nerve supply to the organs must be left practically undisturbed, the animals used must be operated on and then cared for with all the procedures obtaining in the best surgical clinics, so that observations on them could be made after complete recovery from operations and the removal of all pain and distress It required a carefully planned institute to meet all these desiderata The success of Pawlow in setting up such a model institute, and in demonstrating to experimenters in physiology the necessity of fulfilling these requirements, are not the least of his achievements that have benefited science

He had previously made important contributions to the physiology of the digestive system, having already published his experiments on sham feeding, which showed the importance of stimuli in the buccal cavities and of the vagus nerve for the activation of the gastric glands. But once being provided with his elaborate and well-manned institute and liberal means, he proceeded systematically to execute his brilliantly conceived plans. The results of activities in this laboratory have furnished information not only about the function of each of the parts of the digestive system, but also of their cooperative actions under normal conditions. Apart from the clear comprehension of the digestion processes as such that have been gained, and their immense value to medicine, is the far-reaching importance of his demonstration of the influence of psychic effects on body processes. Of course, this must have been vaguely recognized ever since man was capable of introspection, and experimental demonstrations of it were not wanting before Pawlow's time. He first furnished such demonstrations in pure form, with the greatest possible elimination of factors other than psychic.

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[2] Barbour, H G, and Copenhaver, N H The Response of the Surviving Uterus to Morphin and Scopolamin, Jour Pharmacol and Exper Therap, 1915, vii, 529 Barbour, H G Morphin and Scopolamin Action upon the Intact Uterus, ibid, p 547

[3] Smith, M I The Synergism of Morphin and the Scopolamins, Jour Pharmacol and Exper Therap, 1915, vii, 407

[1] General News, The Journal A M A, this issue, p 585

His studies were guided by the thought that the adaptation faculty of the organism furnishes the key. It must be said, however, that later investigations have not wholly confirmed the reality of some of these adaptations, especially those of more acute or temporary nature, such as the quality of the saliva depending on the nature of the stimulus, the power of the gastric juice on the kind of food ingested, or the quality of the pancreatic juice being affected by dietary constituents. His ideas about the nervous activation of the pancreas and about the predominating importance of the psychic factor in activating the stomach gland have also suffered some modification. The great service which he has rendered physiology, however, is as much recognized as ever, not alone on account of the facts he has furnished, but also for the initiation of improved methods for gaining knowledge.

Though he himself opened up many questions in the mechanics and chemism of the alimentary tract, his predilections seemed to be for a study of the relations of reflex and psychic processes to body functions. Recently, therefore, his attention and that of his co-workers had been devoted to the phenomena which he named condition reflexes. In a word, this is the associated effect of some stimulus through the organs of special sense, or of some psychic process, on reflexes. As the results of this work have not been drawn up and given to the world in systematized form, they have not yet attracted deserved attention.

The Gospel of Systematic Living.—Our public health departments, medical schools, laboratories of research, our scrutiny of industry, safeguarding of schools, are contributing each in its field to the vast array of fact, on which will ultimately be founded an intelligent structure of systematic living. Beyond any question, however, interpretation of this gospel must finally rest in the medical profession. Interpretation, however, is but the first word in progress. The last word is cooperation of the public, induced by every available activity in education.—Henry B. Favill, *Pennsylvania Med. Jour.*, November, 1915.

Current Comment

ANOTHER INSTANCE OF MILK-BORNE TYPHOID

Attention has frequently been called in The Journal to the increasing number of reports of milk-borne outbreaks of typhoid fever. This is doubtless due in part to the improvement which has taken place in the character of public water supplies, so that epidemics due to milk infection are brought more clearly to notice now than when they were inconspicuous ripples on the large typhoid wave. Some of these reports carry a significant lesson. One of the most recently reported typhoid outbreaks due to milk is that occurring a few months ago in the town of Gallup, New Mexico.[1] Although the town is not a large one (population, 1910, 2,204), there were eighty-seven cases in the epidemic described. Definite sources of infection were found in the neighborhood of the incriminated dairy. The point we wish to comment on especially is the total lack of any supervision which might have prevented this outbreak. The county health officer is paid only $300 per annum, and this sum seems to be intended for the care of patients at the county hospital. It appears that no one is directly charged with the protection of the water and milk supplies or with any other sanitary duty. In a word, a small sum was appropriated for care of the sick, but not one cent for preventive measures. In this respect Gallup differs no whit from thousands of communities all over the United States. The most elementary facts of hygiene are ignored in the conduct of community affairs, and an appalling amount of preventable disease is not prevented. It is evident that much is still to be accomplished in educating the average citizen to understand and support the demands of preventive medicine.

THE TOXICITY OF ARSENOUS AND ARSENIC ACIDS

Compounds of arsenic are becoming so prominent in therapy, and the types of arsenic products for use in medicine have become so diverse, that any information bearing on their possible mode of action should be welcome. The familiar derivative of arsenic which early found its way into use both as a drug and as a poison is the white arsenous oxid, often itself spoken of simply as arsenic. The salts of arsenous acid are also employed, as in Fowler's solution. Arsenic action is not due to the element, but to the ion of arsenous acid, H_3AsO_3. Organic arsenic compounds in which the metallic atom is attached directly to carbon are only feebly toxic. In the course of time, within the body they seem to yield more or less arsenous acid, a reaction which may suffice to explain any pharmacologic potency possessed by the organic derivatives. It is a somewhat unexpected fact that the closely related arsenic acid H_3AsO_4, its anhydrid and its salts are far less poisonous than is arsenous acid. This statement has now and then been disputed, but only recently again substantiated at the pharmacologic institute of the University of Berlin by Joachimoglu[1] The relatively greater toxicity of arsenous in comparison with arsenic acid could be demonstrated by the proportion of 10 6 in the case of the lethal dose required for intravenous injection in animals Perfusion experiments with isolated frogs' hearts indicated the arsenous compounds to be 300 times as harmful as those of arsenic acid In the case of the isolated intestine the contrast, though plain, was not equally striking This has raised the question why there should be a marked disproportion in the relative toxicity of comparable quantities of arsenic and arsenous acids, depending on the mode in which the test is made The explanation proposed is as follows The toxicity of the arsenic acid depends on the reducing power of the tissues with which it comes into contact By this means it is converted into the very poisonous arsenous compound Some individual organs or tissues have comparatively slight reducing potency In the isolated heart, for example, arsenic acid exhibits little toxicity Throughout the living organism as a whole the reduction of arsenic acid appears to be far more readily accomplished, hence, after intravenous administration of the ordinarily less nocuous derivative, it may become more toxic so promptly by conversion to arsenous acid that the real difference between these related arsenic derivatives is no longer conspicuous This may also explain some of the uncertainty or confusion which has existed in the past in respect to the comparative action of the two substances

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[1] Smith, F. C.: Milk-Borne Typhoid Fever, Report of an Outbreak at Gallup, N. M., Pub. Health Rep., Jan. 14, 1916, p. 59.

REPORTED DANGERS FROM ENAMEL WARE

Among the thousand and one causes given for appendicitis, enamel chips from cooking utensils have been included We are informed[2] that the Superior Council of Hygiene for France recently recommended that legislation be enacted forbidding the use of enamel ware meat choppers in the production of Hamburger steak It was observed that the enamel on such machines was in many instances almost entirely worn off, and the assumption was made that the small particles of enamel which had become broken off were quite likely to be mixed with the meat To avoid all possible danger from the consumption of such particles, this action was taken Langworthy and Lang,[2] of the Office of Home Economics in the U S Department of Agriculture, state that there appears to be no case on record in which it is known that any serious injury has been done to the intestinal wall by enamel particles They call attention, however, to another feature of the now widely used enamel ware articles which is somewhat more likely to be a source of hygienic danger In coloring the enamels, pigments are sometimes added in the form of one of the metallic oxids Insoluble materials are also incorporated into the "glass" of which the enamel is essentially composed, in order to render it opaque instead of transparent For this lead oxid has been used to some extent, particularly because it helps to produce an easily fusible product Lead enamels, like lead glasses in general, offer a poor resistance to chemicals, and are quite readily attacked even by substances which have no action whatever on ordinary glasses which contain no lead The government experts now venture the statement that the use of lead compounds for these purposes, and of lead oxid for producing an opaque appearance, fortunately is fast being discontinued in the manufacture of enamel ware and cooking utensils on account of the possible danger of lead poisoning, since the lead in this form is easily dissolved by dilute acids, like vinegar and the acids of fruit juices With regard to possible dangers from the use of antimony salts to impart desired tints to some kinds of enamel, it is said that preliminary experiments, made in the Department of Home Economics of the University of Illinois, apparently showed that small amounts of antimony compounds were extracted when dilute solutions of organic acids were cooked in some of the cheaper grades of enamel ware It is now possible, however, to secure enamel ware utensils which, according to the manufacturers' labels, are free from antimony compounds

DID YOU BITE?

Do you want five dollars? If so and if you are sufficiently prominent, the "patent medicine" interests will gladly send it to you Possibly it will be for a mail-order diagnosis and treatment For example You may receive a letter from a lady in some outlying country town who says that she has heard of your skill in treating diseases peculiar to women She has a daughter who is suffering from dysmenorrhea, menorrhagia or what not, and she is afraid that the girl will "go into consumption" Enclosed please find a money order for five dollars Will you not kindly send her a prescription (preferably in liquid form) for the purpose of helping her daughter's condition? Of course, diagnosing disease in and prescribing for patients one has never seen will hardly qualify as the scientific practice of medicine But the "patent medicine" interests are apparently willing to part with all the five-dollar bills that are necessary in order to obtain these long-distance prescriptions and diagnoses Possibly, however, a variant is tried You may be called up by 'phone and a man will tell you that his wife is suffering from some ailment peculiar to her sex and desires to be operated on What will you charge for the operation? You may mildly suggest that this question cannot intelligently be answered until you have seen the lady and gone into the case thoroughly Then the gentleman at the other end of the wire will ask you whether it is not a fact that you charge according to the ability of the patient to pay rather than according to the seriousness of the operation Or possibly the scheme may have yet another angle If you are a rather well-known internist or a gynecologist of note an attempt may be made to get you to write a prescription containing, as at least one of the ingredients, viburnum prunifolium — a preparation not unknown to the

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[1] Joachimoglu, G Vergleichende Untersuchungen über die Giftigkeit der Arsenigen Saure und Arsensaure, Biochem Ztschr, 1915, lxx, 144

[2] Langworthy, C F, and Lang, H L Enamels of Cooking Utensils, Jour Home Economics, 1915, vii, 556

“patent medicine” world Many other changes are being rung, for this is a time of stress with “patent medicine” fakers, and in order to defend their nefarious trade they are seeking to manufacture evidence of *argumentum ad hominem* type Such evidence may be considered valuable in prosecuting libel suits against the medical profession

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Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals, education public health, etc.)

ALABAMA

Periodicals for Library—The library committee of the Jefferson County Medical Association, Birmingham, has subscribed for thirty-one medical periodicals published in the United States and abroad

Colored Physicians Organize—Colored physicians of Birmingham have organized a medical union for race uplift and have elected the following officers president, Dr Ulysses G Mason, vice president, Dr Pierce S Moten, secretary, Dr M H Freeman, Jr, and treasurer, Dr C O Booth

Personal.—Dr Cecil D Gaston has been appointed city physician of Birmingham, succeeding Dr Charles Whelan, resigned after seventeen years' service Dr Gaston has also been appointed a member of the staff of the Hillman Hospital——Dr Benjamin L. Wyman, Birmingham, has been appointed a member of the state board of health to succeed Dr Russell M Cunningham, Birmingham, resigned——Dr W Earle Drennen, Birmingham, has resumed practice after two terms of service in war hospitals in France.——Dr Edwin P Solomon has been appointed chief surgeon of the Alabama Great Southern Railroad at Birmingham, succeeding Dr W Earle Drennen, resigned

DISTRICT OF COLUMBIA

Admissions from District to Government Hospital for the Insane—Voluntary admissions of residents of the District of Columbia into the Government Hospital for the Insane are proposed in a bill recently introduced into Congress for that purpose. Application for admission must be in writing, and the mental condition of the applicant must, in the opinion of the superintendent of the hospital, be such as to render him competent to make such an application No person after having been admitted shall be detained in the hospital for more than three days after having given notice in writing to the superintendent of his desire to leave the institution

Common Use of Drinking Cups Regulated—Regulations governing the common use of drinking cups, towels and similar articles went into effect on February 1 The use by the public generally of any unwashed cup, mug, glass or similar article, or of any towel, is forbidden Cups, mugs, glasses, forks, spoons, towels and similar articles used in hotels, restaurants, lunch rooms, stores, shops, schools, office buildings and places of amusement must be thoroughly cleaned after each use, whether for use by the public or only by patrons and employees Hotels, restaurants lunch rooms bar rooms, soda water fountains, hospitals and other similar places must be provided with facilities not only for cleansing but also for sterilizing cups, mugs, drinking glasses, forks, spoons, finger bowls and all bottles, jars, cans and other receptacles to be refilled for sale, and after July 1, 1916, such articles must be not only cleansed but also sterilized after each use.

ILLINOIS

Immunization Against Diphtheria—Beginning February 20, the state board of health announces that it will furnish free to all physicians outfits for making the Schick tests for ascertaining persons who are immune and those who are susceptible to diphtheria

Chicago

The University Club Poisoning—At the banquet given to Archbishop Mundelein at the University Club, February 10, a number of guests were taken suddenly ill after the soup course had been served It was at first announced that the illness was due to ptomain poisoning, but chemical analysis of the soup disclosed the presence of arsenic Recent developments indicate that an assistant chef, evidently of anarchistic tendency, was responsible Happily no serious consequences followed

Chicago Physicians Leave for War Service—Dr and Mrs Harry M Richter, Dr Jacob R Buchbinder, Dr Joseph Loewe and two nurses making up the first hospital unit to go from Chicago to Germany left for the war front, February 14 Dr Richter will relieve Dr John Fischer of the German Hospital, New York, who has been in charge of a 500 bed hospital at Oppeln, near the Russian frontier

INDIANA

Health Survey—A health survey of Indianapolis schools will be started under the direction of the board of health, March 1 Already there have been over 300 anemic children referred to the board of health

Doctors Win Damage Suit.—The appellate court, Indianapolis, decided in favor of Dr John Kolmer and Dr Albert W Miller in the case of suit for damages brought by Fred W Adloy on account of an alleged failure properly to set a fracture of the arm

Baby Conferences—Health conferences for infants have been held during the past two weeks at Butler, where over 200 infants were examined, and also at Auburn, where also a careful examination was made of all infants submitted The health conference is run by Dr Florence Brown Sherbon, Colfax, Iowa, of the federal children's bureau

State Sanitary and Water Supply Association Meets—The Indiana Sanitary and State Water Supply Association held a joint meeting with the Iowa Engineering Society in Indianapolis, February 3, at which the keynote of the addresses was ‘A Century of Progress in Sanitary Engineering” In the absence of Surgeon-General Gorgas, U S Army, Dr Frank B Wynn, Indianapolis, of the Indiana Centennial Commission, spoke commending the association for the introduction of the centennial idea into their meeting, Prof Charles W Stiles, U S P H S, spoke at the afternoon session on the health of the southern states, and in the evening Dr Cressy L Wilbur, chief of the Division of Vital Statistics of the New York State Health Department, made a strong plea for more complete and more rigidly enforced vital statistics laws in the United States

IOWA

Laboratory Opened—The clinical laboratory of the Waterloo Medical Society was formally opened with a reception, January 21, Dr Guthrie McConnell is in charge of the laboratory

Honor Medical Pioneers—In honor of Drs Joseph C Krejci, Grant J Ross, John M Knott and John N Warren, who have been in active practice for forty-five years or more, physicians of Sioux City who are affiliated with the Woodbury County Medical Society gave a banquet, February 3, at which Dr William Jepson acted as toastmaster A silver vase suitably inscribed was presented to each of the guests of honor, who responded by giving brief reminiscences of their experiences in Iowa in the early days

Personal.—Mr Walter F Clowes, New York, has been elected secretary of the Iowa Association for the Prevention of Tuberculosis——Dr Campbell P Howard, Iowa City, has returned after service of a year with the expeditionary forces in France Dr Howard was second in command of a hospital at Boulogne which accommodated 6,700 patients——Dr Will D Runyon, assistant superintendent of the State Sanatorium for Tuberculosis Oakdale, has been appointed resident physician in the National Printers' Home, Colorado Springs, Colo——Dr James W Beck, Conrad, fell on a slippery pavement, January 31, fracturing his right humerus near the shoulder——Dr Ralph W Mendelson, Des Moines, has returned after nine months in Serbia as a member of the American Red Cross Sanitary Commission——Dr Adelbert B Maxwell has been elected secretary of the board of managers of the new Mary Greeley Memorial Hospital, Ames——Dr George E Decker, Davenport, has been elected a member of the board of directors of the Iowa National Bank——Dr Henry Matthey, Davenport, who has been serving abroad with the German Red Cross will return home this month ——Dr William A. Guild, Des Moines, has returned after nine months' service in the war zone——Dr Maurice C

Hennessy has been elected president, Dr John A Sanders, vice president, and Dr James M Barstow, secretary of the surgical staff of Mercy Hospital, Council Bluffs

LOUISIANA

Serum Fund Set Aside—For the purpose of supplying serums of different kinds to the people of the state, the state board of health, at its December meeting, added $50,000 to the budget with which to establish a biologic laboratory

Dowling Asks Enforcement of Laws—Dr Oscar Dowling, president of the state board of health, has addressed a letter to all the district judges in the state, asking them to charge their grand juries on sanitary matters and urge stricter enforcement of sanitary laws

The Lake Charles Typhoid Condition—The typhoid condition at Lake Charles, Calcasieu Parish, is greatly improved From January 15 to 25, no new cases were reported, but in the following week there were six new cases More than 2,000 houses are reported to have been visited by inspectors, who have mailed clean-up orders to numbers of business men and property owners

Hay Fever Activities—Late in December, the Louisiana State Hay Fever Prevention Association was organized in affiliation with the national association Illustrated lectures on the subject of hay fever are being given before the New Orleans Academy of Science, Tulane University, Round Table Club, Loyola University, etc Pamphlets containing illustrations and descriptions of the more common hay fever weeds are being prepared, and will be distributed free to the public schools of the city and state On the recommendation of the association, the commission council of New Orleans has passed an antiweed ordinance, which imposes a penalty, without further notice, for having grass or weeds 2 feet high in private lots and 1 foot high on sidewalks and roads controlled by a franchise It is hoped that the enforcement of this law will eventually eliminate hay fever from New Orleans

MARYLAND

Would End Curb Market—At the request of the city comptroller, Dr John D Blake, health commissioner of Baltimore, inspected the "curb market" on Lombard Street, and in his report to the comptroller states that in his opinion the curb market is a nuisance, as well as a menace and should not be tolerated

Meetings—The Physicians' Civic Club of Baltimore at its last meeting, February 11, was addressed by Dr F Park Lewis, Buffalo, who gave a history of the revolution in Buffalo which took that city out of the column of boss-controlled communities As president of the Commission Government Association he speaks with knowledge and authority——On invitation of the Sisters of Mercy and the medical and surgical staffs, the February meeting of the Baltimore County Medical Association was held at Mercy Hospital on February 16 A program arranged by the medical and surgical staffs of the hospital followed a luncheon at the hospital

Consolidation of Schools—The consolidation of the Maryland Industrial School for Girls with the Maryland State Training School for Girls, under the name of the Maryland Industrial Training School for Girls, is suggested in the report of the Maryland State Training School to the governor The charter of the school was granted by the legislature of 1914 and $1,000 was appropriated for carrying on the work and investigation preliminary to the establishment of the institution An expert investigator employed by the directors has shown the dire needs of an industrial training school in Maryland The facilities in the Maryland Industrial School for Girls are said to be meager, its buildings are old, and its system of administration is out of date because its funds are entirely inadequate To meet the problem it is suggested that the two schools be merged and a modern and adequate plant be erected and operated as a state institution

MISSOURI

Bulletin on Malaria—In The Journal for February 5, p 436, is mentioned the issuing of a bulletin on the "Prevention of Malaria," by the University of Missouri, Department of Preventive Medicine The number of this bulletin is incorrectly stated as No 28, this should be No 10

NEBRASKA

State Officials Transferred—Dr Daniel G Griffiths, pathologist to the Lincoln Hospital for the Insane, has been appointed superintendent of the State Institute for Feebleminded Youths, Beatrice, succeeding Dr William S Fast, who has been transferred as superintendent to the Ingleside State Hospital for the Insane, Hastings

Scarlet Fever—On account of the considerable epidemic of scarlet fever in Omaha, all social center meetings or other meetings in the public schools outside of regular school sessions were prohibited for a period of two weeks from February 2 Children were forbidden to attend the moving picture theaters Some criticism has been made of the health department, which has discontinued giving out the number of cases reported

NEW JERSEY

Personal—Dr Daniel L McCormick has been reappointed chairman of the sanitation committee, Dr C Fred Webner, chairman of the hospital and training school committee, Dr Theodor Teimer of the tuberculosis committee, and Dr Elmer Wherry, chairman of the child hygiene committee of Newark——Dr Robert E Sievers, Bordentown, has been appointed local surgeon for the Pennsylvania System

New Buildings for Rockefeller Institute—The Rockefeller Institute for Medical Research for New York and New Jersey has planned to erect buildings on newly acquired property in South Brunswick township, near Plainsboro The following buildings have been contracted for laboratories at a cost of $90,615, power house and tunnels, $102,556, operating building, $27,838 The work is to be finished by September 1

NEW YORK

Bill for Abolition of Health Officer of the Port—A bill has been introduced into the legislature providing for the transfer and for the abolition of the position of health officer of the Port of New York, and Governor Whitman has sent a special message advocating its passage

Progress in Cold Storage Inspection—Among the activities of the state department of health is that of issuing licenses to cold storage and refrigerating warehouses and of making regular inspection of the various warehouses The number of warehouses inspected during the fiscal year ending Sept 30, 1914, was 6,196, and during the last fiscal year, 9,174 During 1914, ninety-five actions were instituted and $2,025 in fines imposed, during the past fiscal year 256 actions were instituted and $4,460 in fines imposed

Personal—Prof C E A Winslow has resigned his position as director of public health education and editor of the *Health News*, in the state department of health, to accept the Anna M R Lauder professorship in public health at Yale University——Dr Matthias Nicoll, Jr, has been appointed director of the division of public health education in the state department of health, and in addition will have supervision of epidemiologic investigations in the southern and eastern parts of the state——Dr Edmund C Body, Rochester, who has been in Serbia since August last, is now head of the military hospital in Nish

Health Insurance—A bill has been introduced into the state legislature providing for compulsory health insurance for workers of the state, which aims to supplement the present Workingmen's Compensation Law by giving medical attention and cash benefit to workers disabled by sickness as well as accident The plan provides that 40 per cent of the cost of health insurance is to be borne by the workmen themselves, 20 per cent by the state, and 40 per cent by the employers The bill has been drafted by the American Association for Labor Legislation and will cover any case of sickness or accident not within the scope of present legislation It applies to manual laborers and all others earning less than $100 per month

New York City

Personal—Dr Parker Syms has been appointed visiting surgeon to the City Hospital of New York——Dr J Ramsey Hunt has been appointed a manager of the Craig Colony for Epileptics for a term to expire the first Tuesday in February, 1923——Dr John A Ferguson, Brooklyn, is reported to be seriously ill with pleuropneumonia——Dr H Holbrook Curtis was presented with a silver loving cup by the National Institute of Social Sciences, of which he was one of the founders, at the annual dinner, January 14

Semicentennial of Health Department—The New York Health Department proposes to celebrate the semicentennial of its organization by a commemoration dinner on March 8, 1916 The guests will include the mayor, state health commissioner Dr Hermann M Biggs, Surg-Gen William C Gorgas, Surg-Gen Rupert Blue Prof William H Welch, Dr Peter Bryce, Dr Stephen Smith and Prof Charles F Chandler All those engaged either directly or indirectly in promoting public health, physicians, nurses and social service workers are invited Those intending to participate are requested to notify Mr George Roberts, 139 Centre Street, New York

Physicians' Suit to Dissolve Partnership—Dr Silas P Beebe writes that the news item last week, which by mistake appeared under Maryland News, regarding a suit by Dr Beebe and Dr Quimby against Dr Beveridge, "asking that the partnership which they had formed with Dr Beveridge for the manufacture and sale of 'autolysin' be dissolved and that a receiver be appointed to take charge of the concern" is incorrect Dr Beebe writes "The New York newspapers did not contain such statements as are here quoted Dr Quimby and I have never formed a partnership with Dr Beveridge 'for the manufacture and sale of Autolysin' and the New York newspapers did not make any such statement" Relating to the same subject the New York *Herald* of January 28, states 'The complaint asserts that May 6, 1915, the three physicians entered into an agreement as co partners for the practice of medicine, particularly in the treatment of malignant growths"

New York City Leads in Birth Registration.—In a recent number of the *Public Health Reports* attention is called to the importance of completeness in birth registration and it is shown that in New York City the average registration is 98 per cent It is interesting in this connection to note the methods by which this approximate completeness has been secured The department of health has frequently called the attention of physicians to the importance of birth registration and has instituted several hundred prosecutions where violations of the registration requirements were found, but in addition it is the custom in the registrar's office to check all registered deaths of infants under one year with the birth records to ascertain whether the children's births have been previously recorded During the year 1915, there were less than twenty instances in which the births of such infants had not been previously reported and these were mostly children who had lived for but a few minutes, hours, or days Another method of ascertaining the completeness of the birth registrations is the practice of the health department nurses of taking a census of all the babies in the houses visited by them in their regular work and also of all babies coming to the milk stations and of checking these records against the birth registration records

OHIO

Councilman in Cleveland—Prof William T Councilman of Harvard University lectured before the Experimental Medicine Section of the Cleveland Academy of Medicine on February 11 on the subject of glioma, illustrated with lantern slides

Personal.—Dr Gaius E Harmon has been appointed assistant registrar of the Bureau of Vital Statistics of the Cleveland City Division of Health——Dr Eugene F McCampbell, executive secretary of the state board of health, Columbus, was elected dean of the College of Medicine of the Ohio State University, February 8, succeeding Dr William J Means, resigned——Dr Estell H Rorick, Fayette, has been appointed a member of the state board of administration, succeeding Dr Arthur F Shepherd Columbus, term expired——Dr Jonathan B Vail, Lima, with his wife and daughter, left on February 2 to spend the remainder of the winter in Honolulu——Dr Samuel A Zwick of the staff of the Massillon State Hospital has resigned and will practice in Akron

Changes in Health Staff—A change in the political administration of Cleveland has resulted in the following changes in the City Hospital and Division of Public Health Mr Howell Wright, superintendent, and Dr Thomas R K Gruber, assistant superintendent, of the City Hospital, have resigned and in their places have been appointed Dr Charles H MacFarland, Jr, as superintendent, and Dr L R Brigman, former resident physician, as assistant superintendent. Dr Gruber has accepted the post of assistant superintendent of Harper Hospital, Detroit——Dr Clyde E Ford, for six years commissioner of health, has resigned, and Dr Robert H Bishop, Jr, former chief of the bureau of tuberculosis, has been appointed commissioner of health——Dr Moses J Miller, diagnostician to the bureau of laboratories, health department, has been granted leave of absence because of illness

PENNSYLVANIA

Personal.—Dr Charles Roland has been been appointed health officer at Reading, succeeding Dr Charles P Henry, resigned——Dr Bert W Caldwell has returned after seven months' field hospital work in Serbia, and has accepted the superintendency of the Allegheny Hospital——Dr Alfred W Grover, Kingston, suffered severe cuts, January 30, when he drove his motor car through the cross gates of the Lackawanna at a grade crossing at Edwardsville to save himself from being run down by a locomotive——Dr William L MacDougall, Scranton, who has been ill ever since last summer, is reported to be convalescent and ready to resume practice

Philadelphia

Personal—Dr Henry H Doan, as the result of a civil service examination, has been appointed chief of the division of child hygiene, bureau of health of Philadelphia——Dr George M Coates has been appointed assistant editor in charge of the department of diseases of the nose and throat in *Progressive Medicine*——Dr Charles F Mitchell has sailed for Paris to take part in the work of the University of Pennsylvania surgical unit in the American Ambulance——Dr Alvin Strouse left for Vancouver, February 7, whence he will sail to the Orient to make a general survey and study of tropical diseases, snake bites and poisons in India for the Rockefeller Institute in New York His associate in the work will be Dr Victor C Heiser——Dr Francis T Stewart was recently appointed house surgeon to the Pennsylvania Hospital——Dr S W Newmayer has been named assistant supervisor of medical inspection in schools, of which Dr Walter S Cornell is the chief Dr Newmayer succeeds Dr Walter W Roach, who will be medical inspector in the bureau of health

RHODE ISLAND

Intern Year Required—A report from the state board of health states that after Jan 1, 1917, no physician will be allowed to register in that state unless he has served one year in a hospital having at least fifty beds, and has attended at least ten maternity cases

Bottled Spring Water—The January *Bulletin of the State Board of Health* contains the report of the Division of Chemistry and Sanitary Engineering Concerning the use of bottled spring waters in place of public or private water supplies, a custom which is growing, particularly in the larger cities, the chemists say that these water supplies, unlike public water supplies, which are protected from contamination after the water enters the pipes, are not only subject to any pollution which may exist at the source, but are also subject to many chances for dangerous contamination through uncleanly handling in bottling and delivery For the protection of the public, therefore, it is said that the spring water business should be under the supervision of the state sanitary authorities In Rhode Island it has been policy of the board to make inspections of the sources of such water supplies, to examine with care the methods of bottling and distribution and to advise owners, bottlers and distributors with regard to the precautions necessary to secure the safety of such waters

TENNESSEE

Hospital News—The Memorial Hospital, Johnson City, now occupies the home of Colonel Lyle——A meeting of the Business Men's Club of Covington was held, January 6, to discuss the ways and means of securing a hospital for Covington It is estimated that the capital stock of the corporation would need to be about $15,000

Baby Clinic in Chattanooga—The first free baby clinic in Chattanooga, established as the result of the interest manifested by the public in the Better Babies Department of the Chattanooga District Fair, was opened, January 15, at the home of Drs James H Atlee and James A Smith under the patronage of the Cosmos and other women's clubs The clinic is open from 1 to 2 p m daily

State Tuberculosis Commission.—A meeting of the state commission to locate and build a state tuberculosis hospital was called by Governor Rye at Nashville, February 1 The commission, which has been authorized to spend $50,000 for a state sanatorium for tuberculosis, consists of Drs Jere L Crook, Jackson, and Olin West, Nashville, W P Shipp, Clarksville, and J R Richardson Murfreesboro

Personal.—Dr John A Witherspoon has been elected president, and Dr Charles W Brown, vice president of the Central

Health Committee of Nashville——Dr Horace K Alexander has been appointed quarantine officer and medical inspector of Nashville——Dr Blackburn G Tucker, Nashville, has been elected health officer of Davidson County——Dr Rudolph B Watson, formerly of the medical staff of the Panama Canal Zone, has been elected chief health officer for the town of North Chattanooga

WISCONSIN

Eye and Ear Men Elect—At the annual meeting of the Milwaukee Oto-Ophthalmic Society, January 19, the following officers were elected president, Dr Gustavus I Hogue, vice president, Dr John S Barnes, and secretary-treasurer, Dr Claude S Beebe

Epidemic Intestinal Trouble—On January 29, it was reported that there had been more than 1 000 cases of intestinal trouble in Milwaukee, which some physicians thought was a sequel of grip, while others were inclined to attribute it to the water supply Its cause was undetermined

Sanatorium News—Willow Brook, the new tuberculosis sanatorium for Kenosha erected at a cost of $50 000, is completed and will be opened to receive patients this month——The Marathon County Board has decided to locate the antituberculosis sanatorium on the eastern part of the county farm in the town of Stettin

Personal—Dr Wallace P Smith, physician to the State Prison, Waupun, who recently was attacked by a convict with a bottle sustaining severe lacerations, is a patient in St Agnes' Hospital, Milwaukee, suffering from septicemia——Dr Bartholomew Bantley, Milwaukee, has been appointed first assistant surgeon in the Battle Mountain Sanatorium, Hot Springs, S D

CANADA

New Sanatorium—A private sanatorium for the treatment of tuberculosis cases has been established in Gravenhurst, Ont by Dr Charles D Parfitt It is to be known as The Calydor Sanatorium

University News—Dr Joseph Guerard, professor of pathology, *Laval University*, Quebec has been appointed professor of general therapeutics Dr Odilon Leclerc, Quebec, has been appointed professor of physiotherapy and physiology, and also joint professor in the medical clinic of the Hotel Dieu Hospital

Christian Science Death—A coroner's jury in British Columbia, empaneled to inquire into the cause of the death of a woman in Vancouver, recommends that the attention of the government of the province be called to the charge that there are certain persons in Vancouver practicing Christian Science for gain

Montreal Doctors for Overseas Service—Drs Emerson C Smith, Donald E Cleveland of the Royal Victoria Hospital, Montreal, and Dr Gerald T Griffith of the Western Hospital have been granted temporary commissions in the Royal Army Medical Corps and will shortly go overseas *to join one* of the British hospital units in France

Instruction for Medical Officers—A school of instruction for medical officers was commenced in Toronto, February 14 Hart Hall at the University of Toronto is used for drill purposes, and rooms in the medical building are used for lectures The course is so arranged that physicians in practice will be able to attend Eighty fifth-year medical students are taking the course

Object to Discipline—On behalf of two or three medical *practitioners* who had been before the courts and who had been *subsequently* disciplined by the Ontario Medical Council, objection was taken before the Ontario Medical Commission last week to the disciplinary powers exercised by the *council* As a result of the evidence taken there may be some amendment to the present act in the direction indicated

Personal—Lieut-Col Graham Chambers, who has been with the University of Toronto Base Hospital at Saloniki, has been transferred to the Ontario Government Hospital, Orpington, England——Sir George M Foster, Vancouver, B C, Minister of Trade and Commerce for Canada, was the guest of honor at the thirty-fourth annual banquet of the Undergraduate Society of Medicine of McGill University, held the evening of February 5 He stated that the entire medical service of the Allies was on a high plane The hospital and medical fraternity were doing splendid work, and the organization and resources were excellent Dr Frederick A L Lockhart, Montreal, in proposing "The Men on Active Service," said that Queen's had sent to the front 558 men, McGill, 1,213, and Toronto University, 1,847——Major Perry G Goldsmith, *Toronto, who* was with the first Canadian Overseas Contingent, is on his way home for a short furlough——Maj Charles A Young, Ottawa, Ont, has been *appointed assistant* director of medical services, under Col John W Shillington, at Bramshott, England——Maj Samuel H McCoy, Toronto, has been appointed medical registrar at the Record Office, London, England——Col George S Rennie, Hamilton, Ont, has been appointed assistant director of medical services and officer commanding R A M C, at Dover, England——Dr Ronald H MacDonald, Saskatoon, Sask, has been invalided home after an attack of typhoid fever——Capt Oscar A Cannon, Stratford, Ont, home on three months' leave of absence, has been transferred to London, Ont, as deputy assistant director medical services, No 1 Division——Dr Dugald Stewart, M P, Bridgewater, N S, has been gazetted major the C A M C He will conduct examinations of recruits at various places in the Sixth Division——Capt William Hale, Jr, Utica, N Y, has joined the C A M C Captain Hale graduated from Queen's University in 1910——The Cross of the Legion of Honor has been awarded to Lieut C G Wright, Toronto, who was medical officer to Scott's Antarctic Expedition——Dr Armand J M Arthur Rousseau, Quebec, has been appointed medical superintendent of the *new tuberculosis hospital* temporarily established there——Dr Michael Clark, member of Parliament for Red Deer, sustained severe burns of the hands at the burning of the Parliament Building at Ottawa, *February 3*——Dr J L Gibson, Calgary, Alta, has been made captain of a company raised in Calgary, and which expects to leave for overseas duty on April 1 Dr Gibson formerly practiced in Houghton and Republic, Mich

GENERAL

National Safety Council—Under the auspices of twenty-eight bureaus of the federal government an exhibit dealing with safety and other matters will be held in Washington, D C, *from February 1 to 26*——The fifth annual Safety Congress will be held at Detroit, October 16 to 21

Preparations for Baby Week—A bulletin of the children's bureau announces that 1,727 communities are considering preparations for baby week Much interest is manifested throughout the country and in a number of the larger cities definite plans are already under way The bureau emphasizes the opportunity the interest aroused in baby week affords for extending permanent infant welfare work

Relief of Mississippi Flood Sufferers—Tents, provisions and supplies pertaining to the medical and quartermaster's departments of the Army may be lent, issued or used for the temporary relief of destitute persons in the districts overflowed by the recent floods in the Mississippi River and its tributaries if congress enacts a joint resolution recently introduced in the house of representatives and favorably reported by the committee on military affairs

New Officers for Canal Zone Society—At the annual meeting of the Medical Association of the Isthmian Canal Zone held in Ancon, January 22, the following officers were elected president, Dr Lewis B Bates, vice president, Dr Herbert C Clark, secretary-treasurer, Dr Frazer F Monroe, and executive committee, Dr Roland C Connor, Lt-Col Henry D Snyder, M C, U S Army, and Dr Walter B Pierce, all of Ancon

A National Department of Health, the Owen Bill Again—A bill to establish a department of health, and for other purposes, has been introduced into the United States senate by Senator Owen, similar in its terms to other bills introduced in recent years It has been referred to the Committee on Public Health and National Quarantine The introduction of this bill has, it is said, given the National League for Medical Freedom a pretext on which to found an appeal for funds

Deaths Abroad—Herbert Williams, M D, London University, 1890, aged 53, for twenty-three years assistant medical officer of health and medical officer of health for the Board of London, died in London, January 16, from complications which supervened after an operation for appendicitis——H Klaatsch, professor of anthropology at the University of Breslau, aged 53, and author of important works on prehistoric man and on anatomy——J P W Wallichs of Altona, long editor of the *Aerztliche Vereinsblatt*, aged 86——P L Friedrich, professor of surgery at the University of Konigsberg, aged 51

Jacobi Fellowship—The Women's Medical Association of New York City announces the Mary Putnam Jacobi fellowship of $800 available for postgraduate study and open to any woman physician for work in any of the medical sciences The fellowship will be awarded not by competitive examination but on proof of success in the chosen line of work Applications for the year 1916 1917 must be in the hands of the committee of awards, whose chairman is Dr Annie S Daniel, 20 Gramercy Park, New York by April 1, must be accompanied by testimonials as to health, letters as to ability, a detailed account of qualifications, a statement of the work proposed to be done while holding the fellowship and examples of the work of any of the applicants Two reports will be expected from the holder of the fellowship, one to be presented about the middle of the work and a detailed report for publication on its completion

Wine of Cardui Suits—As most of our readers know, the Chattanooga Medicine Company, manufacturers of "Wine of Cardui," brought four suits for libel—two against the American Medical Association and the editor of THE JOURNAL, one against Dr Oscar Dowling, president of the Louisiana State Board of Health, and one against *Harper's Weekly* The suit against Dr Dowling was called at Chattanooga, where the preparation is made, on February 3, and on February 14 illness of two of the jurors caused an indefinite postponement, which means a new trial The suits against the American Medical Association and the editor are now scheduled for March 21 in Chicago

Bequests and Donations—The following bequests and donations have recently been announced

Presbyterian Hospital New York City, $5 000, by the will of Archibald M Stewart

Northern Dispensary New York City, $5 000 by the will of Lambert Suydam

Methodist Episcopal Hospital and Norwegian Deaconess Home and Hospital Brooklyn each $5 000 by the will of William Todd

Biltmore N C Hospital $5 000 for the maternity ward Mission Hospital Asheville N C $2 500 for the colored ward by the will of Mrs F M Wright

Hospital for Negroes Huntsville Ala $5 000 donation by Miss Mary Virginia McCormick

Anna Jaques Hospital Newburyport Mass $5 000 the income to be used to maintain a free bed for Amesbury patients by the will of Dr John A Douglass Amesbury

Stony Wold Sanatorium Lake Kushaqua N Y one fifth interest in the residuary estate of Anna R Morrison, amounting to about $150 000

Animal Experimentation Bill Introduced in the House—Investigation by the secretary of agriculture into experimentation on living animals is proposed in a bill introduced into congress, Feb 8, 1916, by Representative Kahn of California The bill was referred to the committee on agriculture The bill provides for an investigation to cover the extent and conditions of experimentation on living animals in laboratories for research and in hospitals and other establishments, and in the commercial production of serums and vaccines for sale, for the purpose of ascertaining whether such experiments and practices are attended with unnecessary and preventable suffering arising from useless repetitions of experiments, or of proper skill in the experimenters, nonuse of anesthetics and the absence of proper care of the animals on which such experiments or operations are conducted It is proposed to appropriate $20,000 to cover the expenses of the investigation, and the results are to be reported to congress

Child Labor Conference—The twelfth annual conference of the National Child Labor Committee, held at Asheville, N C, was an important and enthusiastic meeting According to reports of the meeting the South, contrary to the impression that is said to be abroad, is not in favor of the employment of small children in the industries, which in that section means chiefly the cotton mill industry Attention is called to the fact that the vote in the House of Representatives of the United States Congress showed that eight Southern states were solidly for the Keating-Owen child labor bill, four had a majority for the bill, and only two, the Carolinas, were solidly against it Speakers from the South at the conference repeatedly showed that they did not believe in the employment of child labor, and that opposition to child labor legislation came from special interests The National Child Labor Committee, after the conference, gives it as the opinion of the committee that sentiment in the South is strong for progressive legislation of this character, and that the employment of small children is unnecessary for the success of Southern industries Delegates were present from twenty states, and 1,500 people attended the meetings

Rural Sanitation and the United States Public Health Service—For investigating and encouraging the adoption of approved methods of rural sanitation, and especially for devising and demonstrating effective measures against pellagra and typhoid fever, instructing farmers and others in the prevention and suppression of these diseases, conducting the necessary investigations and surveys and otherwise taking steps in cooperation with state and local authorities to prevent and eradicate these diseases in rural districts in the United States, for use by the United States Public Health Service, it is proposed to appropriate the sum of $100,000, according to a bill introduced into the house of representatives, February 5 An appropriation of $75,000 for special studies of, and demonstration work in, rural sanitation was requested by the secretary of the treasury in a letter addressed to the speaker of the house of representatives, February 8, for the use of the United States Public Health Service during the fiscal year ending June 30, 1917 An item of $50 000 for the same purpose, for use during the present fiscal year, is included in the urgent efficiency bill now being considered in conference The present request is based on a report of the surgeon-general of the Public Health Service that the results of field investigations conducted by the Public Health Service since July 1, 1914, indicate the urgent need of the extension of these activities in country districts in order that sickness may be prevented, lives saved and local health organization advanced More than 52 per cent of the total population of the country is rural and the advancement of sanitation among this class has not kept pace with the advance in urban communities

Death of Pawlow—Prof Ivan P Pawlow was born Sept 14, 1849, and was graduated in 1879 from the Military-Medical Academy at Petrograd After a few years in Botkin's service and laboratory for internal medicine, he was appointed privat-docent for physiology at the Military-Medical Academy in 1884 The authorities then sent him abroad for two years of study in experimental medicine In Germany he worked under Heidenhain and Ludwig In 1890 he was called to Tomsk as professor of pharmacology, but the same post was given him at the Military-Medical Academy, and the next year the newly completed Institute for Experimental Medicine was placed in his charge In 1895 he was transferred to the chair of physiology, and in 1897 became regular professor, keeping throughout his charge of the Institute for Experimental Medicine, the scene of his pioneer work His first research was devoted to the physiology of the circulation, but his work with "sham feeding" dates from before 1890 His principal work on the physiology of the digestion was published in 1897 The occasion of the twenty-fifth anniversary of his entering on his teaching career was celebrated in 1904 by the collection of an endowment fund for awarding a prize for research on physiology He was awarded the Nobel prize in medicine in 1904, and his recapitulatory address on receiving the prize was published in full in the *Nordisches medizinisches Archiv*, 1905, xxxvii His name is written variously as Pavlov, Pavloff and Pawlow, the Russian letter *B*, of which there are two in his name, being pronounced like "v" or "ff"

Public Health Conference Held in Salt Lake City—Representatives of the United States Public Health Service and of the health authorities of certain western states met in Salt Lake City, February 2, to consider problems of health administration arising out of the unusual prevalence of rabies in parts of the West, and problems incident to Rocky Mountain spotted fever, tuberculosis and railroad sanitation

Dr J W Kerr, assistant surgeon-general, United States Public Health Service, presided Official delegates were present from California, Idaho, Kansas, Montana, Nevada, Utah, Washington, Wyoming and the District of Columbia Representatives were in attendance from the Bureau of Animal Industry the Biologic Survey and the Forest Service of the United States Department of Agriculture, and from organizations of wool growers, sheep and cattle raisers and various railroad companies

The unusual prevalence of rabies in California, Idaho, Kansas and Nevada, with its possible presence in other parts of the West, was the chief cause for calling the conference Rabies among coyotes was so prevalent, it was stated, in some localities, that it was regarded as unsafe to allow children to go to and from school unless guarded against attacks by such animals, and the danger to sheep and cattle was greatly augmented by reason of the presence of the disease. There was an apparent difference of opinion between the representatives of the wool growers and the representatives of the United States Biologic Survey as to the best method of effecting the destruction of coyotes, the wool growers contending for the bounty system and the Biologic Survey favoring the employment of salaried hunters and trappers for such work. Dr W J Butler, the state vetermarian of Montana, claimed that good results had been obtained in Montana by inoculating coyotes with ordinary dog mange and then turning them loose to spread the disease among their fellows The conference adopted resolutions strongly urging the adoption by the various states of legislation to provide state boards of health and other state agencies with authority to establish quarantine areas against rabies and with adequate funds for a campaign against the disease The authorities of the several states were advised to request cooperation from the appropriate federal departments in the establishment of a systematic plan for the eradication of rabies, including the calling of conferences from time to time to promote the efficiency of the work The following provisional plan was recommended

1 That the destruction of wild animals devolves on the proper state authorities and commercial interests within the states, acting in cooperation with the United States Department of Agriculture

2 That the prevention of rabies among humans, including the control of the disease among domestic animals and measures for prophylactic treatment, devolve on the state health agencies cooperating with the United States Public Health Service

3 That the United States Public Health Service be requested to detail an officer or officers to cooperate with the state health agencies in stimulating and coordinating local activities with respect to the limitation and suppression of rabies

A resolution was adopted recommending that the proper federal and state agencies determine by experimentation the value of infection of coyotes by dog mange as a means for their destruction

ROCKY MOUNTAIN SPOTTED FEVER

The finding in the blood of human beings, guinea-pigs and white rats, suffering from Rocky Mountain spotted fever, of certain bodies which he believes have a causative relation to the disease was announced by Dr L D Fricks, surgeon, United States Public Health Service In spotted fever blood stained by Giemsa's method these appear as small extracorpuscular granules, staining bright red and highly refractile, also as similarly sized bodies, surrounded by a pale halo, within or in close proximity to the erythrocytes These granules were most numerous in and around the endothelial cells from the smaller blood vessels

Dr Fricks reported that the ticks that convey Rocky Mountain spotted fever pass the earlier cycles of their lives on chipmunks, ground squirrels and other small animals, migrating later to horses and cows The fact that such rodents may serve as hosts for these ticks interferes with the efficiency of dipping of horses and cows as a means for the eradication of the ticks The availability of dipping is further limited by the relatively small area that any one dipping tank can serve, and the cost of constructing and operating large numbers of such tanks The use of sheep as an agency for the freeing of tick-infested areas from such infestation was pointed out by Dr Fricks Ticks find their way readily into the wool of the sheep as they graze, and in the wool the ticks die or are at least carried forward as the sheep move The grazing of the sheep from inhabited areas onward to uninhabited mountainous regions would tend toward the destruction of the ticks or the carrying of them to places where they could do a minimum of harm to human beings

Dr Kerr announced that the United States Public Health Service would soon issue a leaflet giving in a succinct way a description of Rocky Mountain spotted fever, the leaflet being intended for the widest possible distribution among physicians and others interested in the disease

Resolutions were adopted expressing appreciation of the work done by Dr Fricks and recommending that the state health officers take such steps as might be possible within their respective jurisdictions for the collection of complete morbidity reports with respect to Rocky Mountain spotted fever, and that such health officers conduct, in cooperation with the United States Public Health Service, a campaign of instruction by circular and otherwise within the infected areas, and obtain the cooperation of the United States Department of Agriculture in an effort to reduce tick infestation, through the destruction of small animals by which ticks are carried

TUBERCULOSIS

The conference adopted a resolution recommending the devising and use of better methods than now exist for the care of indigent consumptives who have migrated from one state to another, with provision for the equitable distribution of the cost of maintenance and treatment of such patients

RAILROAD SANITATION

A resolution was adopted asking the surgeon-general of the United States Public Health Service to appoint a committee to formulate a model sanitary code, so as to bring about uniformity in the sanitary regulation of both interstate and intrastate transportation throughout the United States, the committee to submit a report at the annual meeting of the conference in May next.

"ALKALI DISEASE"

The occurrence in certain parts of Utah of a disease that seems to be specific in its character but which so far as he knew had not previously been described, was reported by Dr T B Beatty, secretary Utah State Board of Health The disease appears to have occurred for some time past in Box Elder and Millard counties, from seventy-five to 100 cases occurring each year, and has been known among the inhabitants of those localities as the "alkali disease." It occurs only from the middle of June to the latter part of July, and is always preceded by the bite of a fly, probably the deer fly Many such bites, however, are not followed by infection Those familiar with the disease report a coincident high mortality among rabbits, and conceive some possible relationship between such mortality and the occurrence of the disease in man

The "alkali disease" occurs most commonly in men who have been working in the fields Bites are usually on the exposed surfaces of the body, most frequently in the vicinity of the ear and about the neck Within twenty-four hours after having been bitten, the patient's temperature rises, possibly reaching 104 Swelling and marked induration of the skin occur about the bite and in the neighboring lymphatic glands The skin breaks down in about three days, leaving an ulcer, cleanly punched out, involving the skin and subcutaneous tissue Full convalescence requires from five to seven weeks An extensive scar always remains Deaths are rare No immunity follows the disease

Dr Beatty urged that the United States Public Health Service investigate this disease and suggested that the health officers of the other states represented might possibly find it within their jurisdictions

FOREIGN

Gasoline Rebate—In order not to inflict too heavy an outlay on physicians using motor cars in their professional work, the British government is now granting a rebate of 6 cents per gallon to all doctors making application for it before their local collector of taxes

Famine and Pestilence in Mexico—Recently it has been reported from El Paso that starvation and disease are prevalent in Chihuahua, Coahuila and Durango, that there are no crops and the supply of corn is rapidly diminishing Furthermore, pneumonia and typhoid fever are exceedingly prevalent and the death rate from tuberculosis is rapidly increasing He does not report typhus fever as prevalent in these provinces

WAR NOTES

American Hospital Unit for Germany Arrives—The first hospital unit sent out by the American Physicians' Expedition Committee has arrived in Berlin The unit was headed by Dr Fred Kammerer of New York and included Drs Frank D Gorham, St Louis, Paul K Sauer, New York, and Frank L Paschal, New York, with six nurses This unit will take charge of the military reserve lazaret at Deutsch Eylau, East Prussia

French Military Hospitals—Reports from Paris state that up to Dec 30, 1915, the military and auxiliary hospitals in France contained a total of 500,000 beds, the majority of which are occupied by wounded soldiers The cost of maintenance is a quarter of a million dollars daily The three Red Cross societies operating in France have spent $16,000,000 for the 115,000 beds which they maintain in 1,200 hospitals, and of this amount $1,250,000 has been contributed from American sources

Moxon Medal Awarded to Dejerine—The Royal College of Physicians at London has conferred the Moxon gold medal on Professor Dejerine of Paris for his works on the diseases of the nervous system. This medal is awarded every three years, and it is the first time it has been given to a foreigner Dejerine is physician in chief of the Salpêtriere and director of the clinic for nervous diseases, worthily sustaining the traditions of Charcot's famous clinic. Madame Dejerine, a member of the Klumpke family of scientists, is also a specialist in nervous disorders The Salpêtriere, the scene of their labors, is a hospital and asylum for aged, infirm and indigent women for whom it has 3,701 beds, with an additional department with 776 beds for insane women

BERLIN LETTER

Berlin, Jan 18, 1916

Personal

Death is reaping a rich harvest not only in the field but at home nowadays To the list of prominent scientists who have died since the onset of the war must be added another whose works are known to American physicians December 29, at Hamburg, the former professor of hygiene at Halle, Professor Karl Fraenken (formerly Fraenkel) succumbed to a chronic malady, aged 54 I referred to him a few months ago in my Berlin Letter, mentioning then the change in his name and the illness which ten years ago began to interfere with his active duties The malady which compelled him to retire was an extensive arteriosclerosis He became assistant to Robert Koch in 1885 and under Koch's direction the next year published a manual on methods of bacteriologic examination This was the first comprehensive presentation of Koch's theories, and as the manual possessed the advantages of Fraenken's clarity of style and skill in presenting facts, it soon was widely accepted and was translated into several foreign languages Of Fraenken's own contributions to science may be mentioned his research on the micro-organisms in the different strata of soil, on the germ-content of ice on the action of carbon dioxid on the vitality of bacteria, cultivation of anaerobic bacteria, disinfection of wells and the germ content of ground water He also demonstrated that the filtration of potable waters is not the protection formerly assumed to be the case, and that spring water should be given the preference

In collaboration with Brieger, Fraenken investigated the field of bacterial toxins, and he succeeded in discovering a new method of immunizing against diphtheria He was a pioneer also in certain fields of experimental research, but among his most important contributions to science is his and R Pfeiffer's "Microphotographic Atlas of Bacteriology" In 1890 he was made professor at Konigsberg, the next year he became Rubner's successor at Marburg and in 1895 was called to succeed Renk at Halle where he remained until his retirement last spring He was eminent as a teacher and writer and popular as a banquet speaker, and was certainly one of the most eminent of Koch's pupils

Professor von Noorden and Professor Quincke have been living in Frankfort on the Main since their retirement from their University chairs The University of Frankfort has recently appointed each to a fee professorship (ordentliche Honorarprofessur)

Cancer Mortality

In the year 1913 there were recorded in Prussia 30 882 deaths from cancer In 1912 there were 30 045 deaths from this cause reported, in 1911, 29 473, in 1910, 28,093, and in 1903 21,258 The increase over the cancer mortality of the preceding year was thus 2 8 per cent. In ten years the number of persons dying from cancer has thus increased by 9 624 or 45.2 per cent In 1913 there were 13,835 men (13,587 in 1912) and 17,047 women (16,458 in 1912) The increase is thus greater among women than in men In the ten years in question the cancer mortality among women increased by 47 per cent. and in men by 43 per cent. Calculated by 10,000 living, there were 7 41 deaths from cancer in 1913 to 7 32 in 1912, 7 24 in 1911, and 5 98 in 1903 The figures respectively for men and for women were men, 6 72 (in 1903, 5 52), women, 8 10 (in 1903, 6 42)

The Army Sanitary Service

Among the data recently presented at a representative meeting of military medical men at Berlin, under the auspices of the war department, it was announced that the military medical service now has at its disposal 1,460 automobiles with 700 trailers, 425 heatable cars for transporting the sick and wounded, 137 ambulance trains, 87 hospital trains, and 17 boat trains for transportation by water When burial of the dead is not possible as often occurs with present modes of warfare, the corpses have cresol poured over them to render them harmless In recent reexaminations of the wounded who had been counted out as permanently unfit for service, 25 per cent were found fit for service without the requirements having been lowered

In the sanitation stations on the east front, 600,000 men had been put through the disinfecting process by November In the prisoners' camps there have been only six cases of smallpox but there have been over 41,000 cases of typhus as this pestilential disease is being constantly imported anew with new Russian prisoners The mortality was only 8 per cent, and by November there were no further cases

LONDON LETTER

London, Jan 29, 1916

The War

THE TOTAL BRITISH CASUALTIES

In response to a question in parliament, the prime minister has stated that the total British casualties up to January 9 are 549,467, which are made up of killed, 128,138, wounded, 353,283, and missing, 68,046 In the various fields of operations the casualties are distributed thus France, 400,510, Dardanelles, 117,549, and other theaters, 31,408

ECONOMY OF INFANT LIFE

At the annual meeting of the York Infant Welfare Association, Sir James Crichton-Browne said that one of the most urgent of our war economies was an economy of babies It was essential to our national efficiency that our supply of them should be kept up, and that the extravagant waste of them should be stopped The war had made us realize that it is the mass of people that tells It was the rapid growth of her population—which had increased during ten years by 8½ against our 3½ millions — that had given Germany her aggressive power, and if we would hold our own when the war was over and compensate for the war wastage we must take means to multiply our people We must arrest the decline in the birth rate and grapple with infant mortality Grants were needed for special research work, and expectant mothers should be guarded against ignorance and carelessness by sensible education The excess of females over males in this country, estimated at 1,205,311 in 1913, must be now very much more We could not contemplate with equanimity the fact that in Great Britain, France and Belgium masculinity had shown a tendency to decline during the last half of the last century There had been an increase in English masculinity during the last year, it is alleged, but temporary fluctuations in the rate were common, and no safe conclusions could be founded on the figures so far quoted Soldiers returning from the war married in large numbers, so some rally in the birth rate might be anticipated, but such evidence as we possessed suggested a probable further decline in masculinity

BRITISH HOSPITALS FOR THE FRENCH WOUNDED

In its earlier stages, the war imposed a much greater strain on France than on England, who supplied only a small part of the allied forces Moreover, a large part of France was overrun by the enemy, and a considerable portion still remains in its possession The opportunity and the need for helping in the care of the French wounded were therefore great, and the response was worthy of the occasion There are now no fewer than twenty-seven hospitals in France established, administered and supported by British voluntary effort and staffed by British physicians and nurses The following remarkable list has recently been given by the *Gaulois* the Urgency Cases hospital at Bar-le-Duc and the Arc-en-Barrois Hospitals, the Hopital Herbert Ward at Rolleboise, the Hopital Lady Wemyss at Canly, the British Ambulance Committee at Gerardmer, the Hopital Franco-Anglais (Lady Murray) at Tréport, the Hopital FitzGerald at Passy, the Trianon Hospital at Versailles, the Hopital de l'Alliance at Yvetot, the Hopital Anglo-Ethiopien at Frévent, the Hopital du Chateau de Bearn established at St Cloud by Lady Hartwell, the Allhusen Hospital at Ceret, the Hopital du Chateau d'Anuel near Compiegne, the Joint Anglo-French Hospital and Hopital Civil de la Clayette, the Florence Fiennes Hospital at Malo-les-Bains, the Scottish Women s Hospital at Chanteloup, the Johnstone-Reckitt Hospital at Ris-Orangis, the Hopital du Chateau de Rozieres near Nanteuil-le Haudouin, the Hopital du Chateau de Blancat at Pau, the First Aid Nursing Yeomanry Hospital at Calais, the Lady Sykes Hospital at Canly, the Hopital d'Hardelot near Boulogne, founded by the Duchess of Rutland, the Surgical Ambulance at Rosebruge (Mrs Borden-Turner), the Hopital Canadien No 4 at St Cloud, the Hopital Anglais No 307 at Neuilly-sur-Seine, the Hopital Irlandais at Cezaincourt, and the Hopital Anglais No 6 at Nevers

THE HEALTH OF WORKERS IN EXPLOSIVES

In reply to a question as to the health of the workmen employed in the use of picric and nitric acids, Mr Lloyd George stated in parliament that as regards picric acid no ill effects are caused except a discoloration of the skin, but that workmen engaged on trinitrotoluene are sometimes injuriously affected, the degree of susceptibility varying greatly, many workers being immune Various expedients of a sanitary and medical character are in operation to counteract the difficulty, and a weekly medical examination of all workers is carried out with a view to the transfer to other work of persons especially susceptible

PARIS LETTER

Paris, Jan 20, 1916

The War

DECREASE IN THE MORTALITY RATE IN MILITARY HOSPITALS

Dr Jacques Bertillon, who was at the head of the municipal statistics of Paris and who is now in charge of the medico-surgical statistics of the army, reports that the mortality in our military hospitals was 4 5 per cent in 1914 and the beginning of 1915 This is much lower than that of previous wars, which was about 30 per cent At present, thanks to improvements introduced into our medical service, the mortality has been greatly diminished, it is not over 2 per cent Out of one hundred patients treated in our military hospitals ninety-eight, on the average, are discharged recovered

SCARLET FEVER IN THE ARMY

This subject has just been under discussion at the Reunion medicale de la IV-e armee Drs Felix Ramond and Gustave Chambas, during nine months, have cared for 131 cases of scarlet fever, with complete recovery They observed two frequent complications One, which is familiar, is rheumatism, the other, almost unknown, is scarlatinal jaundice Rheumatism was observed in 29 per cent of the cases and was always very light It ordinarily occurs early and is localized in one or two joints, especially in the knee or shoulder It is a pseudo-rheumatism, as is shown by its clinical features and the almost constant subarticular adenopathy It is interesting to observe the very favorable action of sodium salicylate. Scarlatinal jaundice is more rare (8 per cent of the cases), but in half of these cases it coexists with rheumatism It likewise begins early with a rise in temperature. The coloration of the skin is not deep, being often a light sulphur color The urine ordinarily has traces of pigment. The feces are not always discolored The spleen is very slightly hypertrophied but the liver is normal in size There is no itching no bradycardia and no asthenia The condition ordinarily does not last longer than ten or twelve days The jaundice is benign and does not affect the prognosis

The favorable action of sodium salicylate on scarlatinal rheumatism, and certain analogies between scarlet fever and acute articular rheumatism, led Dr Ramond to treat scarlet fever by sodium salicylate All cases appeared to him suitable for this treatment, and there are no contraindications even when serious renal or nervous conditions are present. The doses employed were the same as those used in articular rheumatism, that is, from 3 gm to 6 gm a day The patient generally feels much better, the temperature and pulse fall rapidly and diuresis occurs at the end of two or three days The effect on complications is just as evident The scarlatinal rheumatism disappears in a few days Endocarditis and pericarditis are much improved In one case the massive albuminuria present at the outset ceased after four days of treatment In the other case, an acute convulsive delirium was overcome in forty-eight hours by strong doses of salicylate It seems that salicylate is well tolerated by scarlet fever patients, and that it has a manifest action on the infection Further observations are necessary, however, for scarlet fever is a very capricious disease in its epidemic course

Dr Merklen confirmed the frequency of the form of rheumatism described by Ramond as occurring in scarlet fever In many cases of scarlet fever that Merklen has seen this summer, this rheumatism has been observed frequently even associated with disturbances of cardiac rhythm or muffling of the sounds of the heart Recovery always occurred without difficulty Whether or not albuminuria contraindicates the use of sodium salicylate depends on the nature of the albuminuria Albuminuria from renal sclerosis is not suitable for salicylate treatment, but this does not apply to albuminuria due to a slight acute nephritis

Death of Professor Hamelin

Dr Elphége Hamelin, formerly professor of therapeutics at the Faculte de medecine de Montpellier, has just died, aged 75

Association News

THE DETROIT SESSION

Announcement of Hotel Headquarters

In announcing the hotels selected as headquarters for the annual Scientific Assembly to be held in Detroit, June 12-16, the Committee on Arrangements again requests that hotel reservations be made through the Committee on Arrangements, rather than with the hotels directly When the subcommittee on hotels receives a request for a reservation, it will take up the matter with the management of one of the hotels and see to it that the hotel advises the applicant of the reservation made In writing to the committee, please name a first and second choice of hotels and state the number of rooms desired for the accommodation of your party, also, name the rate you are willing to pay Those who desire rooms with bath should state whether a tub or a shower is preferred The local Committee on Arrangements should be notified promptly in case the reservation is not to be used, this notice will permit the space to be assigned to others

A preliminary list of hotels appeared in The Journal, Feb 5, 1916, page 445 The list of hotel headquarters follows

HOTEL HEADQUARTERS

General Headquarters — Statler

Section	Hotel
1 Practice of Medicine	Ponchartrain, Cadillac Sq and Woodward
2 Surgery, General and Abdominal	Tuller, Grand Circus Pk., Park and Adams
3 Obstetrics, Gynecology and Abdominal Surgery	Statler, Grand Circus Pk, Washington and Bagley
4 Ophthalmology	Statler, Grand Circus Pk, Washington and Bagley
5 Laryngology, Otology and Rhinology	Statler, Grand Circus Pk, Washington and Bagley
6 Diseases of Children	Addison, N W Woodward and Charlevoix
7 Pharmacology and Therapeutics	Tuller, Grand Circus Pk., Park and Adams
8 Pathology and Physiology	Tuller, Grand Circus Pk., Park and Adams
9 Stomatology	Ste. Claire, N E Monroe and Randolph
10 Nervous and Mental Diseases	Plaza, S W Madison and John R.
11 Dermatology	Ponchartrain, Cadillac Sq and Woodward
12 Preventive Medicine and Public Health	Cadillac, S E Michigan and Washington
13 Genito Urinary Diseases	Ponchartrain, Cadillac Sq and Woodward
14 Hospitals	Charlevoix, S W Park and Elizabeth
15 Orthopedic Surgery	Eldorado, Winder, near Woodward

Marriages

Harry P Bowen, M D, Johnson Creek, Mich, to Miss Florence F Imig of Waukesha, Wis, at Milwaukee, January 4

Henry Gurdon Fish, M D., Fargo, N D, to Miss Gladys Mercedes Zirkle of Carrington, N D, at Fargo, January 26

James Tickell Downs, Jr, M D, Dallas, Texas, to Miss Elizabeth Florence Erich, at Allentown, Pa, December 14

Otto Carl Pickhardt, M D, New York City, to Miss Helen Kahle of Bridgehampton, L I, N Y, February 6

Eugene Radford Boyer, M D, Hersey, Wis, to Miss Florence Marie Carlson of Woodville, Wis, recently

Erwin Paul Zeisler, M D, Chicago, to Miss Ruth Spiro of South Bend, Ind, at Chicago, February 14

William Culbert Lyon, M D, U S Navy, to Miss Battie Moody, both of Houston, Texas, January 23

James Roy St Clair, M D, Alexandria, Pa, to Miss Besse Grogg of East Berlin, Pa, December 25

David Lazarus, M D, to Miss Harriette Gross, both of New York City, February 1

Eugene Lee Myers, M D, to Miss Faletia Ray, both of St Louis, February 2

Deaths

Richard Henry Whitehead, M D University of Virginia, Charlottesville, 1887, aged 50, a Fellow of the American Medical Association, and a member of the Association of American Anatomists, demonstrator of anatomy in his alma mater from 1887 to 1889, professor of anatomy and dean of the medical department of the University of North Carolina from 1891 to 1905 and thereafter professor of anatomy and dean of the Medical Department of the University of Virginia, Charlottesville, one of the best known anatomists and teachers of anatomy of the United States, author of a work on "Anatomy of the Brain," and a frequent contributor to the literature on anatomy and pathology, an enthusiastic advocate of the higher medical education and a regular and interested attendant at the conference on medical education, died at his home in University, Va, February 6, from pneumonia

Thomas Hubbard Russell, M D Yale University, New Haven, Conn., 1875, aged 63, a member of the Connecticut State Medical Society, professor of materia medica and therapeutics in his alma mater from 1883 to 1891, and of clinical surgery from 1891 until the time of his death, for thirty years attending surgeon to the New Haven Hospital and thereafter consulting surgeon to the institution, one of the most prominent surgeons of New England, died at his home in New Haven, February 4, from pneumonia following an attack of influenza

James Witherspoon, M D Western Pennsylvania Medical College, Pittsburgh, 1895, aged 45, a Fellow of the American Medical Association and American College of Surgeons, professor of descriptive anatomy in his alma mater, chief surgeon of St. John's General Hospital, North Side, Pittsburgh, and a member of the staff of the Allegheny General Hospital, one of the leading surgeons of Pittsburgh, died at the home of his father, North Side, Pittsburgh, February 1

Ogilvie DeVilla Ball, M D College of Physicians and Surgeons in the City of New York, 1867, aged 75, a Fellow of the American Medical Association, treasurer of the Medical Society of the State of New York for several years and president of the Albany County Medical Society in 1894, a veteran of the Civil War, coroner of Albany County, N Y., in 1874, for four years demonstrator of anatomy in Albany Medical College, died at his home in Albany, December 15

Carroll Rollin Bancroft, M D College of Physicians and Surgeons, Baltimore, 1908, aged 36, a Fellow of the American Medical Association, for two years city physician and health officer of Anaconda, Mont , for four years a teacher in the Philippine Islands and after his graduation for two years assistant superintendent of the Montana State Hospital, Warm Springs, died in the Good Samaritan Hospital, Los Angeles, February 3

Henry Parrish, M D Medico-Chirurgical College of Philadelphia, 1897, aged 67, a Fellow of the American Medical Association, and a member of the Philadelphia Laryngological Society, also a clergyman and Doctor of Divinity, laryngologist to the Pennsylvania State Dispensary for Tuberculosis, died at the home of his son in Philadelphia, February 2, from heart disease

Clarence E James, M D College of Physicians and Surgeons, Keokuk, Iowa, 1880, aged 64, a Fellow of the American Medical Association and a charter member of the Marion County (Iowa) Medical Society, while making a professional call near his home in Durham, Iowa, January 30, fell on the ice, striking his head, and died a few days later from cerebral hemorrhage

James LaRue Wadsworth, M D Northwestern University Medical School, Chicago, 1863, aged 77, a Fellow of the American Medical Association, formerly a member of the Illinois State Board of Charities, surgeon to the Vandalia Consolidated Coal Company, Collinsville, and formerly mayor of that city, died in his office in Collinsville, January 26

John P Ralston, M D American Medical College, St Louis, 1880, aged 64, a member of the Missouri State Medical Association, physician to the Children's Home and a member of the staff of the Burge Deaconess and St Johns' hospitals, Springfield, Mo , died at his home in that city, January 30, from cerebral hemorrhage

John Abbott Douglass, M D Medical School of Maine, Brunswick, 1854, College of Physicians and Surgeons in the City of New York, 1861, aged 86, a member of the Massachusetts Medical Society, surgeon of the Eleventh Massachusetts Volunteer Infantry during the Civil War, died at his home in Amesbury, Mass , February 4

Rufus Elmer Darrah, M D Harvard Medical School, Boston, 1890, aged 54, a Fellow of the American Medical Association, a member of the Rhode Island State Board of Health and president of the Newport (R. I) Board of Health and School Committee, died at his home in Newport, February 8, from pneumonia

Joseph Ross Wilson, M D Northwestern University Medical School, Chicago, 1892, aged 48, a member of the Indiana State Medical Association, and a well-known practitioner of Hebron, Ind , while driving over a grade crossing at Henderson, Ind, February 12, was struck by a train and instantly killed

Henry Arthur Albers, M D Rush Medical College, 1881 aged 59, one of the founders of the Wisconsin College of Physicians and Surgeons, and professor of medicine and clinical medicine therein, for thirty-three years health officer of Thiensville, Wis , died at his home in Milwaukee, January 31

Charles L Wachter, M D College of Physicians and Surgeons, Baltimore, 1884, aged 60, a member of the medical and chirurgical faculty of Maryland a member of the Frederick County School Board and director of the Thurmont Bank, died at his home in Sabillasville, Md , February 3

Joseph Brooks Follmer, M D College of Physicians and Surgeons, Baltimore, 1884, aged 56, a member of the Medical Society of the State of Pennsylvania, school director and member of the Board of Education of Berwick, Pa , for many years, died at his home in Berwick, January 31

Evan Gabriel Williams, M D University of Buffalo, 1864, aged 75, a practitioner, druggist and clergyman of Remsen, N Y , coroner of Oneida County for six years and four years a member of the board of supervisors, died at his home in Remsen, February 1, from asthma

Ira Harris, M D Albany (N Y) Medical College, 1881, aged 63, for thirty-two years a missionary of the Presbyterian Board of Foreign Missions in Tripoli, Syria, and United States consul at Tripoli for twenty years, died in that city, November 25, from typhus fever

Silas Arnold Houghton, M D Harvard Medical School, 1891, aged 51, a Fellow of the American Medical Association and a member of the New England Pediatric Society and the Boston Obstetrical Society, died at his home in Brookline, Mass , February 6 from pneumonia

James Henry Snodgrass, M D University of Tennessee, Nashville, 1888, aged 79, surgeon in the Confederate service during the Civil War, for nearly forty years a practitioner of Sparta, Tenn , but since 1905 a resident of Nashville, died at his home in that city, January 30

James Wallace Gregg, M D Dartmouth Medical School, Hanover, N H., 1867, aged 72, a member of the Vermont State Medical Society, for forty years a practitioner and druggist of Brattleboro, Vt., died at his home in Brattleboro, February 2, from heart disease

Paul Rider, M D College of Physicians and Surgeons, Baltimore, 1911, aged 31, a Fellow of the American Medical Association and a practitioner of Wardensville, W Va , died at the home of his wife s parents in Morgantown, W Va , February 1, from myocarditis

William B Campbell, M D University of Michigan, Ann Arbor, 1881, a Fellow of the American Medical Association and president of the Doniphan County (Kan) Medical Association, died suddenly in his office in Troy, Kan., from heart disease, February 4

James McHenry Howard, M D University of Maryland, Baltimore, 1869, aged 76, of Baltimore, a Confederate veteran, quarantine officer of Baltimore in 1881 and 1882, died in Johns Hopkins Hospital, Baltimore, January 31, from heart disease

James Fife Hughes, M D University of Maryland, Baltimore 1860, aged 81, surgeon in the Confederate service during the Civil War and thereafter a practitioner of Alleghany County, Va , died at his home in Clifton Forge, Va , January 31

Eric E Wisehart, M D Jefferson Medical College, 1911, aged 28 a Fellow of the American Medical Association, and a specialist on diseases of the eye, ear, nose and throat, died at his home in Snow Hill, Md., January 29, from acute nephritis

Victor Borne Chrane, M D St Louis University, 1909, aged 35, a member of the Kansas Medical Society, of Logan, Kan, died December 19, at a hospital in Concordia, Kan, from septicemia, due to an operation wound

Royal Langdon (license, New Jersey, 1902), aged 49, a practitioner since 1896, president of the Nutley (N J) Board of Health, died at his home in Nutley, January 22, from heart disease

Henry Stults Sheffield, M D University of Michigan, Ann Arbor, 1892, aged 50, for twenty-three years a practitioner of Elyria, Ohio, died at his office in that city, January 25, from tuberculosis

Addrian L Moody, M D Northwestern University Medical School, Chicago, 1882, aged 61, died at his home in Chicago, February 3, after an invalidism of twenty-five years from paraplegia

Orlando B Williams (license, Indiana, 1892), aged 67, a veteran of the Civil War, and for twenty-seven years a practitioner of Andrews, Ind, died at his home in Andrews, January 25

Thomas Franklin Stockdale, M D Jefferson Medical College, 1878, aged 63, a Fellow of the American Medical Association, died at his home in Rural Valley, Pa, January 23

Jacob B Ray, M D Starling Medical College, Columbus, Ohio, 1850, aged 89, a member of the Ohio State Medical Association, died at his home near Omega Ohio, January 25

John Harvey Shaw, M D Jefferson Medical College, 1909, aged 31, who retired from practice after two years on account of ill health, died at his home in Lancaster, Pa, January 21

Julius Alexander Faison, M D Jefferson Medical College, 1886, aged 65, a Fellow of the American Medical Association, died at his home in Bennettsville, S C, December 21

H W Brashear (license, Washington County, Pa, 1884), aged 71, for nearly fifty years a practitioner of Washington County, died at his home near Beallsville, January 23

Edward H Goyer, M D California Medical College, San Francisco, 1893, aged 77, of Eureka, Calif, died in Soldiers' Home, Calif, November 15, from pneumonia

Raymond Watkins, M D Eclectic Medical Institute, Cincinnati, 1911, aged 29, of Blanchester, Ohio, died in Santa Rosa, N M, January 18, from tuberculosis

Franklin H Sanborn, M D University of California, San Francisco, 1892, aged 46, died at his home in Fort Bragg, Calif., January 20, from pneumonia

A D Wren (license, Arkansas, 1903), aged 73, one of the oldest residents of Nevada County, Ark,, died at his home in Harmony, Ark, about January 19

Weldon W Lea (license, Arkansas 1903), aged 65, for many years a practitioner of Princeton, Ark, died at his home in that place, January 22

Leslie Tuttle, M D Queen's University, Kingston, Ont 1875, aged 67, died at his home in Tweed, Ont, from fibrosis of the pancreas, November 11

Robert Charles Grove, M D Columbian University, Washington, D C, 1873, aged 65, died at his home in Shepherdstown, W Va, January 13

Robert L Ray, M D Medical College of Georgia, Augusta, 1886, aged 50, died at his home in Devereux, Ga, January 26, from heart disease

Tirzah Eveline Goodwin, M D Boston University School of Medicine, 1875, aged 64, died at her home in Whitman, Mass, January 24

W P Tinsley, M D Kentucky School of Medicine, Louisville, 1866, formerly of Owenton, Ky, died in November last in West Virginia

A I Haines (license, Georgia, 1873) of Wrightsville, Ga, aged 66, died in the Davis Hygienic Institute, Macon, Ga, January 19

John H Mock, M D University of the South, Sewanee, Tenn, 1898, aged 41, died at his home in Thomasville, N C, January 26

James J Piper, M D Missouri Medical College, St Louis, 1877, aged 80, died at his home in Chicago, January 25, from pneumonia

James A Peeples, M D Jefferson Medical College, 1868, aged 74, died at his home in Wrightsdale, Pa, January 24

H. J Lile (license, Arkansas, 1903), aged 47, died at his home in Cash, Ark, January 18, from pneumonia

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

AS VIEWED BY THE DRUGGISTS

The Druggists Circular Discusses the Supreme Court's Decision on the Constitutionality of the Sherley Amendment

A week or two ago The Journal published some newspaper comments on the Supreme Court's action in declaring the Sherley Amendment to the Food and Drugs Act constitutional Our readers may be interested in the attitude taken by the better class of druggists on the same question No publication issued in the interest of pharmacy better represents all that is good in that profession than the *Druggists Circular* of New York This publication has consistently fought for high ideals in the practice of pharmacy and is as outspoken against medical frauds as The Journal itself The leading editorial in the first issue of the *Druggists Circular* following the Supreme Court's decision discusses that decision The whole editorial is worth reprinting but we have room only for the closing paragraph This reads

"Nostrum fakery dies hard For a long time accustomed to getting what they wanted from legislative bodies through their 'red-clause' influence over the press, the nostrum men seem unable to realize that a day of enlightenment is dawning, that the public is coming into its own with respect to decent and honest treatment at the hands of its legislative and executive servants as well as at the hands of those who depend for existence upon the public's patronage It may be as true now as it ever was that 'a sucker is born every minute,' but the present-day 'sucker' is being weaned from some of his old beliefs about the ability of nostrums to cure by the wholesale diseases which, treated separately and each according to its individual requirements, often baffle the most skillful practitioners of medicine The time seems to be about ripe for those who have been growing wealthy from the sale of consumption 'cures', cancer 'cures' and various other kinds of 'cures' to change their base—to follow some honest business if they can, and if not that, then to cease attempting to apply in medicine those deceptive methods of which they are past masters"

DIARSENOL

A correspondent in Birmingham, Ala, writes

"Can you inform me of the facts with regard to Diarsenol, advertised by A C. Smith of Windsor, Ontario? I have heard various statements made as to the product but have not seen anything to be considered authentic or definite"

An item appeared under Canada news in The Journal, Aug 28, 1915, page 810, reading

Salvarsan Substitute —Under the patronage of the University of Toronto, "diarsenol" is now being manufactured in Toronto, as a substitute for salvarsan.

Beyond this we have no knowledge of the product The Association's chemical laboratory has not examined it nor are we familiar with clinical trials which would demonstrate its value or safety In the advertising matter it is claimed to be chemically identical with salvarsan It is said to be manufactured by the Synthetic Drug Company, Toronto, Canada In a recent circular the Mills Chemical Company, Ltd, Toronto, Canada, acting as distributor, offers to supply it to American physicians, duty paid, on receipt of postoffice money order As salvarsan is covered by United States patent, the American agents for salvarsan would probably object to the sale of a substitute

A C Smith appears to be a jobber in drugs The Journal (Nov 2, 1912, page 1642) said in connection with the sale of contrabrand acetylsalicylic acid (aspirin)

" the advertisement of A C Smith is not calculated to inspire confidence since he appears to reside in Canada although he does business and claims to keep his supply in the United States"

Correspondence

The Kinetic Drive

To the Editor —The recent discussion of the kinetic drive by Drs Carlson, Woelfel and Crile must of necessity be of interest to laboratory worker and clinician alike, since it is a continuation of a discussion, in which at times I have participated, which has ranged through the clinical and scientific societies for some years past And since, on the record of past performances, I do not think that I may fairly be classed as an exponent of the kinetic drive as Dr Crile has formulated it, I may the more readily be pardoned for pointing out what seem to me certain errors in the argument against Dr Crile's position It behooves the laboratory man to be circumspect in his criticism of clinical theories, since going beyond the bounds of well established things weakens his position, not merely with reference to the particular subject under discussion, but with reference to clinical phenomena in general In justice to Dr Crile, therefore, I should like to call attention to a few points in the objections urged against his theory

1 The nature of the nerve impulse I am not aware that this question has been definitely settled, nor does a search of the literature show that a recent attempt to explain the nerve impulse on an electrical basis is a wholly isolated one Hermann, Bernstein, Goethlin and others have held similar ideas While it seems to me probable that there is a chemical phase as well as a purely physical phase involved in nerve conduction, there are certain serious objections to the view that a chemical phase is present These have been summed up in a most excellent recent work on physiology written by a critical and experienced investigator (W M Bayliss Principles of General Physiology," London and New York, 1915, pp 378 et seq) All purely nervous processes (intellectual included) give rise to such an extremely small amount of heat that any chemical change which occurs must either be extremely slight or be of such a nature as to be accompanied by a minimal heat production

2 While the first objection is perhaps nothing more than a matter of opinion, the second which I shall consider may be a misstatement of fact It is boldly and forcibly stated that organic compounds of iodin, such as that found in the thyroid, do not dissociate. Several considerations enter into the account in arriving at an estimate of the validity of such a statement. We do not yet know in just what form the iodin in the thyroid is combined with the protein Possibly it is joined to an indol group, as suggested by Kendall's recent work And it is well known also that somewhat similar organic compounds of iodin do dissociate In a recent work on conductivity and ionization constants of organic compounds (Scudder, Heyward "The Electrical Conductivity and Ionization Constants of Organic Compounds," New York, 1914, o-iodobenzoic acid, m-iodobenzoic acid, p 190), I find the ionization and conductivity constants for two iodin compounds with benzoic acid This is the nearest approach to the compound isolated by Kendall which I have seen in the literature, but a further search might reveal one even more closely related Few chemists of my acquaintance will venture on a prediction of the properties of an unknown compound, and until we have actually investigated the properties of the iodin compound in the thyroid, we cannot say either that it does not dissociate, or that it does But there are certain other considerations which make it appear permissible to cling a little longer to the belief in the dissociation of the iodin compound in the thyroid *(a)* Indol, or indeed any form of protein not containing iodin, when given as food or medicine, fails to bring about the specific results observed after administration of the iodin compound The iodin seems to be the important thing *(b)* The studies within the last few years by L J Henderson ("The Fitness of the Environment," New York, 1913, Chapter IV) and others of chemical regulation in the animal organism have impressed on the minds of many laboratory workers the great importance of small variations in the concentration of certain ions in the body fluids These variations continually occur This has been admirably summed up by J S Haldane ("Mechanism, Life and Personality," New York, 1914, pp 49-51) Lack of space constrains me to omit the quotation An extremely slight degree of dissociation of the iodin-bearing compound would be all that one would expect if any analogy holds between it and other organic and some inorganic compounds within the body The action of salvarsan, an organic compound of arsenic which probably acts by slow dissociation of the arsenic within the body, is suggestive in this connection

3 I have elsewhere called attention to a peculiar deportment of the respiratory nervous mechanism as compared with the cortical nerve cells (Pike, F H, and Scott, E L *American Naturalist*, 1915, xlix, 354) Briefly, the respiratory cells are excited by an increase in the concentration of the hydrogen ions in the blood which is too slight to affect the cortical cells But the respiratory cells continue to act more vigorously than usual when the concentration of carbon dioxid, and presumably also of hydrogen ions, if Haldane's view of the normal stimulus of the respiratory cells is correct, in the blood has risen so high that the activity of the cortical cells has ceased and the animal is deeply unconscious Why this is so I do not know But such are the facts, as I have many times observed, and as I will gladly demonstrate in our laboratory to any physician or physiologist who has not observed them for himself The phenomena have been familiar to all students of the nervous mechanism of the respiration since the appearance of Sigmund Mayer's classical description of the respiratory movements in asphyxia

4 The question of whether Dr Crile is justified in ascribing to paralysis or abolition of function certain phenomena that might be ascribed to inhibition is again a matter of opinion In the realm of the nervous system, inhibition has been a much used word, often, I fear, without due consideration, on the part of the user, as to just what is involved I have heard, in the same room at the same meeting, two different speakers attribute two different and even antagonistic phenomena to inhibition For instance, one speaker has ascribed the condition of shock which he obtained after transection of the spinal cord to inhibition, and the second speaker, not to be outdone, attributed the earlier onset of convulsions due to drugs in an animal immediately after transection of the spinal cord to the failure of inhibition normally coming down from the cerebrum I must confess that I was puzzled at the time, and I do not yet see how both explanations—the effect of inhibition in the one case and its absence under other like conditions—can be correct Indeed, I have sometimes suspected that neither one is correct, and I have studied the question laboriously

Certain very well known but not sufficiently pondered properties or peculiarities of inhibition may be cited *(a)* The classical demonstration of inhibition, and the point from which exponents of the omnipotence of inhibition usually start, is the inhibition of the heart on stimulation of the vagus nerve But such an inhibition, if it arises in response to electrical stimulation of the nerve, is a transient thing, and the heart does not remain motionless for more than a minute or two at a time after which beats are resumed It is only when some chemical stimulant, such as muscarin, is applied that the heart stops for long periods Here, in the earliest, most clear cut and most carefully studied case of all, inhibition is a *transient* thing *(b)* The heart, possibly the stomach and intestines and other structures containing smooth muscle, and innervated, either wholly or in part by the autonomic nervous system (using the term in Langley's sense), are the only structures or organs in the body which exhibit pure inhibition, that is, a cessation of activity without an accompanying active motor response of another related structure It is well known that electrical stimulation of the cerebral motor cortex elicits a response from a *group* of muscles, and in this response there is a contraction of one muscle, or more, and a relaxation (or inhibition) of the antagonistic muscle or muscles (Beevor, C E "The Coordination of Single Muscular Movements in the Central Nervous System," The Journal, July 11, 1908, p 89) Neither contraction nor inhibition outlasts the stimulus by more than a very brief interval It is difficult, or impossible, to get inhibition of any skeletal muscle or group of muscles, without contraction of the antagonists, by any stimulation applied within the central nervous system Enough has been said to indicate my own irreverent attitude toward what Prof W T Porter has called the fetish of inhibition I would not deny to Dr Crile the right to assume a similar irreverence if he chooses

I may recapitulate by saying 1 In the opinion of some laboratory investigators, the electrical hypothesis of nerve conduction is neither matter for pure ridicule, nor is the chemical hypothesis, however much we may lean toward it, to be regarded as proved 2 Some organic compounds of iodin dissociate, as is shown by a measurement of their ionization and conductivity constants, we cannot, therefore, categorically deny that the particular unknown organic iodin compound in the thyroid dissociates until it has been isolated and its ionization and conductivity constants measured 3 The well known phenomena of asphyxiation afford an admirable example of an agent—increase in the concentration of hydrogen ions—which will at once violently stimulate the respiratory nervous cells in the medulla and paralyze, not merely inhibit, the cortical motor cells 4 It is neither lese-majesty nor sacrilege to refuse to recognize the omnipotence of the fetish of inhibition

It must not be inferred that I am adducing any of these considerations as evidence in favor of Dr Crile's hypothesis I wish simply to show that, although some of Dr Crile's views appear to me to be erroneous, Professor Carlson's objections are not altogether well founded My own objections to Dr Crile's theory are based on neurologic considerations I have presented them, somewhat crudely, it is true, in another place (*American Journal of Surgery*, October, 1914, *Supplement of Anesthesia, p 7)* In my opinion, it would not detract in any way from his theory, if he would modify some portions of it which relate to the cerebrum and cerebellum and look more closely into the possibilities for surgical evil residing in the medulla oblongata

Although it may not be usual in correspondence, I have given references to certain sources on which I have drawn in writing this letter Annotations would be better than references, but I have already made heavy demands on space Therefore, I must depend on the diligence of my readers to verify what I have said

F H Pike, Ph D, New York
Assistant Professor of Physiology, Columbia University,
College of Physicians and Surgeons

So-Called "Incipient" Tuberculosis

To the Editor —Is it correct to use the expression "incipient pulmonary tuberculosis" when we wish to describe a pulmonary condition which has existed unchanged for months and possibly years?

The National Association for the Study and Prevention of Tuberculosis gives the following definition of incipient or beginning tuberculosis

> Slight or no constitutional symptoms (including particularly gastro intestinal disturbances, or rapid *loss of weight)*
>
> Slight or no *elevation of* temperature or acceleration of the pulse at any *time* during the twenty four hours
>
> Expectoration is usually small in amount or is absent Tubercle bacilli may or may not be present
>
> Slight infiltration limited to the apex of one or *both lungs* or a small part of one *lobe*
>
> No tuberculous complications

This definition indicates the farthest extent of lesion or *disease possible* to be classified as incipient tuberculosis This corresponds closely with the Turban-Gerhardt scale, or Turban 1, defined as a slight lesion extending at most to the volume of one lobe or two half lobes If both lobes are involved, the involvement must not extend lower than the spine of the scapula posterior, nor lower than the clavicle anterior, in one sided involvement the extent must not be lower than the second rib

Is it not evident after scanning the *foregoing* classification that so-called incipient pulmonary tuberculosis is now no longer a beginning disease, that with such findings the stage of incipiency has *long* since passed and the disorder is now fully established, particularly when we see it plainly stated that bacilli may or may not be present? The word "incipient" denotes the beginning of something, something that is not yet fully established, has just passed the borderline from a negative to a beginning positive state. Accepting this definition, *then the term* "incipient tuberculosis" as applied above should be either eliminated or used in a more restricted sense, because the disease is now no longer in the beginning stage If the conditions of incipiency as outlined above have existed for months or perhaps years, all depending on the extent of involvement and the rapidity of the pathologic process, is it then logical or reasonable to call the stage incipient when on repeated examinations we find the same physical signs? In the history of no other disease do we continually speak of a beginning disorder when we have before us all the evidence of a long existing malady

Most European writers on medical topics, *when they* refer to primary or established pulmonary disease, usually designate it by such descriptive terms as "early tuberculosis," as "manifest tuberculosis" or as "first stage disorder" The expression "*incipient tuberculosis*" to *denote a definite beginning* involvement is never used In speaking of early established pulmonary disease, no matter how long the disease has existed or how much primary involvement may be present, are not such descriptive terms more correct, appropriate and less misleading than the term "incipient" now in use?

John Ritter, M D., Chicago

Removal of Silver Stains

To the Editor —Doubtless many of your readers have been annoyed by the stains of argyrol on their hands or clothing It may be of interest to know that in either case a thorough rubbing with a salt grease, such as bacon grease, followed by soap and water will completely remove all traces of discoloration due to the solution mentioned

E Gard Edwards, M D, La Junta, Colo

[Comment —The procedure for the removal of silver stains which our correspondent reports is interesting Silver stains on towels, etc, can readily be removed by the application of dilute solutions of mercuric chlorid —Ed]

Oertel System of Graduated Exercises at Hot Springs

To the Editor —With the realization of our local resources of climate, topography and government ownership of the reservation, a committee of the Hot Springs-Garland County Medical Society during the past year took up with the local representative of the Department of the Interior the question of laying out a course for the Oertel system of graduated exercise

Having, in the past few years, spent thousands of dollars on its system of roads and foot-paths through the scenic reservation, the government readily consented to add the finishing touches to complete the system These consisted of

1 A careful survey to determine the degree of slant and altitude

2 Placing at short intervals of stone markers properly numbered and colored

3 The preparation of a small map with routes colored to correspond to the stone markers From the back of the map may be determined at any numbered and colored stone marker the distance, degree of slant and the altitude

The course was prepared with the view of giving 4 degrees of slant, from almost level to very steep Along the roads are placed benches at brief intervals, and a plentiful supply of pure spring water is pumped to the top of the mountain It will be possible to prescribe the amount and degree of walking and hill-climbing to the minutest detail

Our course was patterned after that established by Oertel at Reichenhall, where the paths are marked with stations, benches are supplied for resting, and the trees along the road are marked with colored bands to represent the degree of slant

It is believed that the Hot Springs of Arkansas will prove an ideal location for such a system Nature has done much for the place, and through the action of the hot radioactive waters, free skin and kidney elimination are easily induced

Much credit for establishing the system here is due Dr W P Parks, superintendent of the reservation

William H Deaderick, M D, Hot Springs, Ark.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

LITERATURE ON PREVENTION OF POSTOPERATIVE ADHESIONS

To the Editor —Please give references to literature on how to prevent postoperative adhesions Arthur Newitt Detroit

Answer.—The following is a partial list of recent articles on this subject

Payr E Iron and Magnet in Prophylaxis and Treatment of Peritoneal Adhesions *München med Wchnschr* Nov 25 1913 abstr, The Journal Jan 10 1914 p 171

Reichelderfer L. H Postural Treatment of Postoperative Abdominal Adhesions *Surg Gynec and Obst* December 1913 abstr The Journal Jan 17 1914 p 239

Pope, S Use of Citrate Solutions in Prevention of Peritoneal Adhesions *Ann Surg* January 1914 abstr, The Journal Feb 14, 1914 p 570

Kirchberg F Treatment of Peritoneal Adhesions, *Med Klin* March 29, 1914 abstr, The Journal May 2 1914 p 1442

Plotkin, G Application of Large Magnet in Gastro-Intestinal Derangement, *St Petersb med Ztschr* April 14 1914 abstr The Journal, May 30 1914 p 1766

Lyman C B and Bergtold W H Amniotic Membrane for Prevention of Postoperative Peritoneal Adhesions, *Surg Gynec and Obst* June 1914

Henze, C. W Experimental Study of Silk Tendon Plastics with Particular Reference to Prevention of Postoperative Adhesions *Surg Gynec and Obst* July 1914 abstr, The Journal Aug 8 1914 p 511

Lyman C. B Use of Amniotic Membrane in the Prevention of Peritoneal Adhesions, abstr The Journal Oct 3, 1914 p 1229

Pribram E E Prophylaxis of Peritoneal Adhesions *Arch f klin Chir* August, 1914 abstr The Journal Oct. 3 1914 p 1238

Wathen J R. Abdominal Adhesions Prevented with Sodium Citrate in Hypertonic Salt Solution *Kentucky Med Jour* Dec 15 1914

Lissovskaia S N, and Djanelidze, I. L Injection of Liquid Petrolatum Into the Abdominal Cavity to Prevent Adhesions, *Russk Vrach* xiii No 29 abstr The Journal Feb 20 1915 p 705

Sweet J E. Chaney R H, and Willson, H L. Prevention of Postoperative Adhesions in Peritoneal Cavity *Ann Surg* March 1915 abstr The Journal March 27 1915 p 1107

Lyman C B Use of Amniotic Membrane in Prevention of Peritoneal Adhesions *Colorado Med* August 1915 abstr, The Journal Sept 4 1915 p 904

Brinsmade W B Intestinal Adhesions Bowel Protection, The Journal Sept. 11, 1915, p 920

REQUEST FOR INFORMATION AS TO SUITABLE HOME FOR SEMI INVALID

To the Editor—Can you give me the address of some institution where I could place a maiden lady of about 45 years of age permanently or at least for a number of years? This is not a mental case, nor a case of tuberculosis On account of the usual prohibitive rates the family is not in a position to place her in a sanatorium They could probably pay $30 00 per month, or at least $25 00 or a lump sum for her care for a number of years or permanently The lady is a semi invalid and suffers from nervousness, which is greatly exaggerated by her being constantly humored by home surroundings In other words, she is better away from home than at home Any place where she could have a fairly quiet home and where she could be persuaded to take an interest in things would be suitable. A little directing and supervision would be essential A. W C M D

Answer.—The Journal will appreciate information on the foregoing, which will be forwarded to the inquirer

CIMEX LECTULARIUS I E. BEDBUGS

To the Editor —Referring to the inquiry (The Journal Feb 5 1916 p 448) regarding *Cimex lectularius* I would recommend the following Procure an ounce of bromin close the windows tightly then remove the cork close the door tightly and after twenty four hours open and air the room The fumes do not seem to affect anything but the bugs and their eggs these are all put out of commission

George F Beasley M D Lafayette Ind.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Connecticut Regular, New Haven, March 14 15 Sec., Dr Charles A. Tuttle 196 York St, New Haven Homeopathic, New Haven March 14 Sec Dr Edwin C M Hall, 82 Grand Ave., New Haven, Eclectic New Haven, March 14 Sec, Dr T S Hodge, 19 Main St., Torrington

Florida Homeopathic, Jacksonville, March 10 Sec, Dr J B Griffin, St Augustine

Maine Portland, March 14 15 Sec., Dr Frank W Searle 776 Congress St Portland

Massachusetts Boston March 14 16 Sec., Dr Walter P Bowers Room 501 No 1 Beacon St. Boston

Missouri St Louis, March 20 22 Sec. Dr J A B Adcock, State House Jefferson City

Wyoming Laramie, March 14-16 Sec., Dr H E McCollum, Laramie

California Reciprocity Report

Dr Charles B Pinkham, secretary of the Board of Medical Examiners of the State of California, reports that 46 candidates were licensed from June 22 to Sept. 17, 1915 The following colleges were represented

College		Year Grad.	Reciprocity with
California Eclectic Medical College		(1911)	Arkansas
Cooper Medical College		(1904)	Washington
University of Southern California		(1904)	Arizona
University of Colorado	(1913) Colorado	(1914)	Arkansas
George Washington University	(1912) Iowa,	(1912)	Dist. Colum
Bennett College of Eclectic Medicine and Surgery		(1905)	Illinois
Chicago College of Medicine and Surgery	(1910)	(1914)	Illinois
College of Physicians and Surgeons Chicago		(1903)	Illinois
National Medical University Chicago		(1901)	Michigan
Northwestern University	(1904) Iowa	(1907)	Illinois
Rush Med Coll	(1899) Arizona (1901) W Va	(1903)	Washington
	(1907 Illinois (1912) Minnesota	(1914)	Illinois
Sioux City College of Medicine		(1904)	Iowa
State University of Iowa, College of Homeo Med		(1907)	Iowa
Hospital College of Medicine Louisville		(1898)	Indiana
Medical School of Maine		(1897)	Florida
Baltimore Medical College		(1913)	Dist. Colum
Johns Hopkins University		(1906)	Mass
Harvard University		(1913)	Mass.
Detroit College of Medicine		(1902)	Michigan
University of Michigan Medical School		(1904)	Arizona
University of Minnesota		(1909)	Minnesota
John A Creighton Med Coll	(1903) Iowa, (1902)	(1906)	Nebraska
Columbia University College of Phys and Surgs.		(1904)	New Jersey
Cornell University		(1900)	Illinois
Medical College of Ohio	(1906)	(1907)	Ohio
Miami Medical College		(1904)	Ohio
Pulte Medical College		(1891)	Arizona
Jefferson Medical College		(1897)	Kansas
University of Pennsylvania	(1895)	(1913)	Washington
University of Pittsburgh		(1910)	Penna
Meharry Medical College		(1911)	Virginia
Vanderbilt University		(1909)	Missouri
University of Vermont		(1914)	Vermont

Connecticut Eclectic November Report

Dr E C M Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports that two candidates were licensed through reciprocity, Nov 9, 1915 The following colleges were represented

College	Year Grad	Reciprocity with
Kansas Homeopathic Medical College	(1896)	Missouri
New York Homeo Med Coll. and Flower Hosp	(1912)	New York

Kentucky December Report

Dr A. T McCormack, secretary of the Kentucky Board of Health, reports the written examination held at Louisville, Dec 7-9, 1915 The total number of subjects examined in was 10, total number of questions asked, 100, percentage required to pass, 70 The total number of candidates examined was 13, of whom 9 passed and 4 failed, including 1 osteopath Two candidates were granted reregistration licenses by examination The following colleges were represented

College		Year Grad	Per Cent
PASSED			
Louisville National Medical College		(1912)	72
University of Louisville	(1911) 80 (1914) 79	(1915)	86
University of Oregon		(1914)	89
Jefferson Medical College		(1913)	81
University of Tennessee		(1909)	81
Vanderbilt University	(1914) 77	(1915)	84
FAILED			
Louisville National Medical College		(1912)	56
St. Louis College of Physicians and Surgeons		(1915)	66
University of Nashville		(1908)	64*

* Official reports do not give this candidate as a graduate.

Book Notices

Surgery of the Blood Vessels By J Shelton Horsley, M D, F A C S, Surgeon in Charge of St Elizabeth's Hospital, Richmond Cloth Price, $4 Pp 304, with 89 illustrations St Louis C V Mosby Company, 1915

The chief value of this work lies in what the author has to say on the technic and results in surgery as applied to the large blood vessels themselves, a field in which he has had considerable experience His experimental work has contributed much to our knowledge of the subject, and he has helped to simplify the technic As a result of his experiments and experience he is very careful to refute the extravagant statements which have been made regarding surgery of the blood vessels He says "The sensational articles that have appeared in the public press have been to a large extent unwarranted The idea that a new limb can be transplanted and will remain useful or that a kidney or goiter can be grafted from one individual to another is erroneous These experiments, even in animals, have not been permanently successful" He then quotes Guthrie on the same subject, who said, "This is the disappointing but unanimous conclusion of experimenters" However, while this undoubtedly is the condition today, it does not mean that some way may not be discovered in the future which will make these things possible The author finds that reversal of the blood current in the lower extremity by division of the vessels and end to end union between artery and vein has proved of little value, as the arterial blood finds its return through nearby anastomosing veins and probably does not reach the periphery He thinks that if reversal is to be tried it should be done by lateral anastomosis rather than by end to end suture Concerning transfusion, the author thinks it is unnecessary to make hemolytic tests of the donor's and recipient's blood before doing transfusion, as the cases in which hemolysis takes place to any serious extent are rare In addition to the usual discussion of the surgery of aneurysms and of thrombosis and embolism, the author takes up varicocele, varicose veins, hemorrhoids, and transplantation of the anterior temporal artery in order to make the work complete There is nothing specially new in these chapters, but the subjects have been presented in a brief and concise way so far as operative measures are concerned

Theory and Practice of Bloodletting By Heinrich Stern, M D, L L D, Visiting Physician, St Mark s Hospital, New York Cloth Price, $2 50 Pp 264, with illustrations New York Rebman Company, 1915

The author aims to set forth in a systematic manner the important progress of bloodletting, especially in its more recent experimental and clinical investigations After a historical review of the procedure, he describes the functional changes which follow bloodletting Changes in the amount and distribution of blood effected by bloodletting, cupping and phlebostasis are readily understood According to the author, venesection reduces blood pressure better and more lastingly than any other treatment He discusses changes in the composition of the blood caused by its withdrawal from the blood vessels Abnormal and deleterious substances are removed with it, but the effect of bloodletting on osmotic tension, the author thinks, is the most important He concludes that it is the reestablishment of osmotic equilibrium or the "osmotherapeutic properties of bloodletting, heretofore unrecognized as such, that render it of such great value in quasimoribund cases" Venesection, moreover, stimulates the hemopoietic organs so that more erythrocytes are produced after blood is withdrawn than existed before, and they become more resistant as well as more numerous The effect of bloodletting on the movement of lymph is referred to, and a section is devoted to the technic of bloodletting, cupping and phlebostasis

It is unfortunate that a book on so important and interesting a subject is not written in more idiomatic English Moreover, numerous grammatical errors can be found in the text and sentences are often so involved as to make reading wearisome Nor can we fully agree with the author's views as to the mode of action of venesection in uremia or in some other diseases

Medicolegal

Admissibility of Testimony of Physician Making Physical Examination

(McGuire vs Chicago & Alton Ry Co (Mo), 178 S W R 79)

The Supreme Court of Missouri, Division No 1, in affirming a judgment in favor of the defendant in this personal injury case, holds that there was no error in admitting in evidence the testimony of a physician relating to statements made to him by the plaintiff, who was required by an order of the trial court to submit to a physical examination by the physician That such communications are not within the privilege secured to the patient by Section 6362 of the Revised Statutes of Missouri, the court says is evident, for they do not come within either its letter or reason The information was not acquired from one who stood in the relation of patient to the witness, nor was it acquired, actually or ostensibly, for the purpose of enabling the witness to perform any professional service either of diagnosis or treatment for the plaintiff, but only for the purpose of qualifying him to inform the court as a witness with respect to those facts properly included in the purposes of the examination It was contended with much force and reason that the only justification for the rule by which a court may compel a litigant to exhibit his body to the scrutiny of a potential witness outside the limits over which its immediate supervision and protection extends is to prevent the concealment of the physical facts on which the right to recover depends, and which can be discovered only by inspection The plaintiff insisted that it is an abuse of this power to use it to force statements from the party, which may be filtered as admissions through an irresponsible witness, instead of using the ample legal process available to secure the testimony in open court In this case the testimony tended to show that certain physical conditions superinduced by gonorrhea sometimes cause hernia of the kind found present in the case of the plaintiff, and that these same conditions were also present, and were recognized in the examination That it was a part of the duty of the physician to ascertain these facts, so far as they might appear from inspection, that they were relevant to the inquiry, and that he was competent to testify to them, the court has no doubt The plaintiff testified, however, that the stricture or deposit of scar tissue which was said to be a cause of rupture had been present only two years, while the physician said that the plaintiff had informed him that this feature had existed during a period which covered the entire time since the accident in which he claimed he sustained a rupture Thus the question was presented whether, under the circumstances in evidence, the defendant could impeach the plaintiff by the evidence of the physician as to statements not connected with his present condition elicited from him during the examination The examination was an act of the court, whose instrument the physician was, and the plaintiff's counsel had the right to be present, as at any other proceeding in the cause, for the protection of the interests of his client The physician did not say in his testimony that the statement of the plaintiff in regard to the time the stricture had existed had been called out by any question or suggestion of his, or that it was not, as it appeared on its face to have been, perfectly voluntary Under these circumstances, there was no error in admitting the testimony

Not Required to Guarantee Results—Consent to Operation Necessary—Evidence

(Zoterell vs Repp (Mich), 155 N W R 692)

The Supreme Court of Michigan affirms a judgment in favor of the defendant, who was alleged to have performed on the plaintiff, without her consent, two surgical operations which deprived her of the ability to bear children and resulted in an abdominal postoperative hernia The defendant was the attending physician and surgeon for diseases of women at a hospital in which the patient, who had worked as a scrubwoman, was received The jury found that the operations were not against her consent That the nature of her trouble and the probable necessity of removing her ovaries was explained to and discussed with her, the court says it thinks was shown by her own testimony, for she stated she told the defendant she did not want them taken out The difficulties and uncertainties in the practice of medicine and surgery are such that no practitioner can be required to guarantee results, and all the law demands is that he bring and apply to the case in hand that degree of skill, care, knowledge, and attention ordinarily possessed and exercised by practitioners of the medical profession under like circumstances, and the bare fact that full recovery does not result, or that a surgical operation is not entirely successful, is not in itself evidence of negligence As to those matters of special knowledge strictly involving professional skill and attention, unskilfulness, negligence, or failure to do that which ought to be done must be shown by the testimony of those learned in such matters The trial judge, in a full and careful charge, positively instructed the jury that if the plaintiff did not understand and consent to the operations as performed, she was entitled to recover damages He said, in part In this case, and in any case of an operation, the consent of the person operated on is essential to justify the party operating in the performance of such operation, and regardless of how successful the operation may have been, how successfully performed, or how much such operation may have been needed, unless consent was given it is an unlawful operation, and the party operating is liable for whatever damages may have resulted therefrom, according to the testimony in the case And this consent must be with knowledge and understanding of the operation itself If you find that the consent of the plaintiff at the first operation was given for the treatment of the uterus only, and at the second operation for the repair of the hernia only, and that she did not consent to the operation for the removal of one of the ovaries at the first, and the other at the second, operation, and that the defendant did remove the ovaries at the time stated, then the consent to the operation for the cleaning of the uterus the first time and the consent to the operation to repair the hernia at the second time, could not excuse the defendant for performing an operation for the removal of the ovaries In other words, consent must be given to the operation performed Experts were permitted to testify as to the probability and need of an operation of the character that was admittedly performed The jury should take this into consideration as bearing on the probability or nonprobability of the plaintiff having consented to the operation in question There was no error committed in instructing the jury that if the plaintiff understandingly consented to the operations in question, and they were performed under and according to such consent, there was no evidence in the case to sustain a recovery of damages The testimony introduced at the trial was chiefly directed to the issue of consent, and the necessity and propriety of the operations

Not Required to Puncture Eardrum

(*McGray vs Cobb et al* (*Minn*) *153 N W R 736*)

The Supreme Court of Minnesota awarded a new trial in this case, which was reported in the Medicolegal Department of The Journal, Sept 25, 1915, p 1134 The court says that on a rehearing granted in this case the majority of the members of the court have reached the conclusion that a new trial should be had, because the evidence was insufficient to warrant the submission of this claim of improper or negligent treatment to the jury "Was Dr Beals justified in the exercise of the skill, learning, and diligence usual among physicians in good standing in his profession in not puncturing the eardrum before, or in not increasing the drainage through the eardrum after its rupture?’ The quotation is from the charge to the jury It is considered that the opinions of the experts furnished no basis for a finding that good practice required the eardrum to be punctured after the physician was called and before the pressure of the accumulated pus ruptured it, or that, by proper treatment, any other or better drainage could have been provided than was provided by means of the rupture thus made by Nature's force. In other respects the original opinion is deemed correct.

Society Proceedings

ANNUAL CONGRESS OF MEDICAL EDUCATION, PUBLIC HEALTH AND MEDICAL LICENSURE

TWELFTH ANNUAL CONFERENCE OF THE COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION

Held in Chicago Feb 7 1916

Dr Arthur Dean Bevan, Chicago, in the Chair

Medical Education in America

Dr Arthur Dean Bevan, Chicago The points which I wish to emphasize are 1 We now have as a standard of medical education a seven year course of study, as high a standard as adopted by any country in the world 2 Today an undergraduate can obtain a better undergraduate training in medicine in the United States than in England, Germany, France or Austria 3 Steps are being taken to make the hospital intern year a legal requirement to practice medicine 4 In each medical center, with two or more medical schools, these should be brought together in a single cooperative scheme of medical education 5 In the evolution of medical education in this country, the medical profession has done more to place itself on an efficient basis than any other profession or field of effort 6 We are now confronted with the problem of placing the profession on a basis of efficiency and preparedness not only for peace but also for war Steps are being initiated at this meeting to accomplish this

Progress in Medical Education

Dr N P Colwell, Chicago From 1865, just following the Civil War, the number of medical colleges in the United States was rapidly increased until in 1904, 166 separate institutions were reported The rest of the world then had 154 During this time, however, forces were being developed which would eventually demand an entirely different type of medical teaching institution It was during the same period that Pasteur, Koch, Klebs, Löffler, Pfeiffer, Kitasato, Frankel, Obermeir and others made their remarkable discoveries in the field of bacteriology, which were destined to revolutionize the practice and teaching of medicine During this time antiseptic surgery had its beginning, and the foundation was laid for the prevention of epidemics and for the saving of untold thousands of lives through the use of antitoxins and serums During this time medicine was placed on a more sound, scientific basis than it had ever previously held Epoch-making discoveries, however, have continued since that time and are still placing at the disposal of the medical profession definite and verified knowledge in regard to the etiology, treatment and prevention of disease.

Conditions in 1900, therefore, were ripe for the beginning of the campaign which the American Medical Association inaugurated through its Council on Medical Education As a result, the number of colleges has been reduced by 43 per cent., the total number of medical students has been reduced by nearly 50 per cent, and the annual number of graduates has dropped nearly 40 per cent. The totals last session were ninety-five medical colleges, 14,891 medical students and 3,536 graduates

While statistics show that the total enrollment of students has about reached its lowest ebb, the number of colleges will doubtless continue to show a decrease, owing to the general adoption of higher entrance standards There is no danger of a dearth of medical colleges, however, since it can be seen that fifty or sixty medical colleges could easily care for all the students enrolled during the session of 1914-1915 in the 102 medical teaching institutions

COLLEGE FINANCES

Of the ninety-five medical colleges now existing, eighty reported total incomes for the session of 1914-1915 ranging from $411,570 the highest, to $4,529, the lowest The average for each college was $65,137, and the grand total was $5,211,002

In students' fees the income for each college ranged from $113,523, the highest, to $500, the lowest The average income from this source was $22,388, and the grand total was $1,791,013 It will be noted, therefore, that the fees paid by medical students cover a little more than one third of the total income of the medical schools

Included in the income obtained, aside from students' fees, thirty-four colleges reported the receipt of a total income from endowments of $1,164,602, or an average of $34,253 for each of the thirty-four institutions which reported income from this source, twenty-eight colleges reported an income from states or municipalities amounting to $864,285, or an average of $30,868 for each institution

The total enrollment in these eighty medical colleges during the session of 1914-1915 was 12,108 The average income received from each student in tuition fees was $148, whereas the average expenditure for each student was $417 On the average, therefore, the cost of teaching each student last year was nearly three times greater than the amount he paid in fees in that year

CHARTERING OF COLLEGES

Through the lack of an adequate check on the chartering or conduct of such institutions, a new and popular form of quackery has been established This lack provides the easiest present day method of evading the educational requirements of the medical practice laws Colleges and schools professing to turn out in a few brief weeks or months, by correspondence methods or otherwise, specialists in some branch related to medicine have been springing up in various states

The literature which they send out leads students to believe they will be prepared to treat human ailments skilfully The students enter in good faith, pay fees usually larger than those demanded by the best medical schools, waste months or years of valuable time, and may go on for years before they learn how totally inadequate was the training furnished

The largest number of these institutions at present is found in Illinois, where conditions are especially favorable Besides the two Class C schools which continue to exist, there are in Illinois colleges of osteopathy, chiropractic, chiropody, naprapathy, somopathy, physcultopathy, refraction, optics and a legion of others, most of which have for their chief inducement elegantly printed diplomas conferring the degree of doctor of this, that or the other

In Iowa a ridiculous situation exists, where several so-called chiropractic institutions have been chartered which, without adequate equipment, and with scarcely any entrance requirements, are turning out, by correspondence courses or other loose methods, many of those who profess to cure all kinds of diseases by manipulation of the spinal column These graduates, although "made in Iowa," are not permitted to graze on Iowa soil, but go to states not having adequate legal barriers

The greatest problem which state licensing boards are now being called on to solve is in connection with the "graduates" of the drugless healing colleges

In Ohio, a year ago, the chiropractors and several medical sects were clamoring for separate boards and the provision for lower educational standards than were required of physicians To prevent the confusion which would result from the multiplicity of boards, an amendment to the medical practice act was obtained, placing the control of all medical cults under the state medical board

A new medical practice act has been secured in Wisconsin which provides the same educational standards for osteopaths as are required of physicians

SYMPOSIUM ON THE RELATION OF THE LABORATORY COURSES TO THE WORK OF THE CLINICAL YEARS

Dr Elias B Lyon, dean of the University of Minnesota Medical School, Minneapolis, read the first paper on this subject

Dr Llewellys F Barker, professor of clinical medicine, Johns Hopkins University, Medical Department, Baltimore, followed with a paper entitled "Relation of the Preclinical Laboratory Courses to the Work of the Clinical Years"

Dr James Ewing, professor of pathology, Cornell University Medical College, New York, read a paper entitled "Principles and Experiments in Medical Education"

Dr Frederic S Lee, professor of physiology, Columbia University College of Physicians and Surgeons, New York, read a paper entitled "A Proposed Undergraduate Course in Clinical Pathology"

These four papers will be published in full next week

Discussion on the Relation of the Laboratory Courses to the Work of the Clinical Years

Dr William T Councilman, Boston For a great many years I have endeavored to make a close analysis of students The number we have to teach has increased so enormously that we are constantly attempting to teach too much, and sometimes we lose sight of the fact that in these preclinical courses the men should be trained in scientific methods Students should come into the medical school with a scientific method of study inculcated in them, but they do not They come from colleges to us knowing nothing thoroughly, so that the teaching of the class of men we have in the first two years is very unsatisfactory We are not going to make it very much more satisfactory by increasing the demands It is not the amount but the training which they should have before they come to us This thoroughly inefficient method of education goes down to the bottom of the primary and secondary schools and colleges

Formerly, there was a strong line of demarcation between the preclinical studies and the clinical studies That line no longer exists The men who have a scientific ideal can attain the fulfilment of it just as much in medicine or surgery as in physiology and pathology, so that for certain men the time in the preclinical years could be shortened

As to the admirable course mentioned by Professor Lee, such instruction can be had now in the best hospitals That course is one which should be given not in the laboratory but in the hospital, bringing together physiology and clinical medicine Formerly, we had only one scientific discipline—anatomy—and then added physiology and pathology, and later all of the others We are constantly striving to teach men too much, and in so doing lose sight of what is really our great function—that of imparting method and scientific discipline

Dr Frank Billings, Chicago I wonder how many of us can go back and take the point of view of the student What Dr Councilman has said is true, that our curriculum is a stuffing process, and I am afraid, as Dr Barker has pointed out, we do not think of the student as a human being We lay out an amount of work without respect of the individual, his caliber, and what his environment may be in his private life, and we force him to take so much of the pabulum Medical education has improved enormously, especially in the last ten years There is hardly a school that can exist now in this country that has not full-time teachers in the so-called fundamental branches It is necessary that the student be grounded in these fundamentals We know that the fundamental teaching is rational in many of the schools of the country Many teachers have learned that in their studies they need to study men as well as animals in making their tests

I was glad to hear what Dr Lee said about teaching physiology It has always seemed to me that physiology should be taught on the human being as well as on the animal

In relation to the laboratory courses and clinical medicine, no one has discussed the relation of the teachers in the different departments There is a feeling of hostility that is rather general in most medical schools of the country between the laboratory man and the clinical man Part of it is justified, a great deal of it is not justified, and much of it would disappear if we could have closer relation between teachers of the so-called laboratory branches and clinical teachers The motives of the clinical teacher would not be impugned so much as they have been in the past The clinical man can help the laboratory man very materially and make his work much more interesting to him, and the laboratory man can be of the greatest use to the clinician While I believe in the organization of departments, so that one may apply the fundamentals to clinical medicine, as Dr Barker has said, still we should have a closer relationship between the laboratory men and the clinical men There would not be any disputing, or much if any suggestion about the incompetency of the ileocecal valve, if the physiologist would come into the clinic and help to study the cases If there was a closer relationship between the different departments we would not have a clinician saying that laboratory tests for secretions of the digestive tract, especially the stomach, are of no use, he would have different knowledge if he kept in touch with the laboratory man So we need to apply all that to the student We need to think of those who are going out to make practitioners because mighty few will become research workers, and not all of them can get training in research in a medical school

Osler handled a body of students as though they were human beings He did not try to teach them so many facts, but he taught them how to study disease as an unnatural phenomenon He made them read literature because it was a part of their work in reference to the study of disease He taught them principles

Dr Robert C Coffey, Portland, Ore If I understood Dr Ewing, he belittled the intern year With experience as a state medical examiner, the most pitiful thing I have ever seen is the man who is not only a college graduate, but also a graduate of one of our great universities, withering and dying in his community with all of his knowledge because he has not been taught how to handle patients The country is full of such practitioners We have in our community a large number of men who have been educated in the very best universities of the country, yet who are becoming discouraged and probably going into the orchard business or some other commercial enterprise because they have never been able to deal with people On the other hand, in our community the leading practitioners are the men who have had from one to five years' experience as interns What I have said actually occurs in practice The man who has been educated, but has not had an internship, is unfitted to meet and to make his way with the men who are the graduates of perhaps some inferior school, but who have had training as interns

JOINT SESSION OF THE COUNCIL ON MEDICAL EDUCATION AND THE FEDERATION OF STATE MEDICAL BOARDS

SYMPOSIUM ON THE NATIONAL BOARD OF MEDICAL EXAMINERS

Reasons for a National Board

Dr. William L Rodman, Philadelphia What are the reasons for a national board? Every one will admit the impossibility of having a uniform standard where there are fifty states, some of these states having multiple boards It is to protect men who, on account of ill health or sickness in their family, or for some other reason, wish to change their location that the national board provides them with a certificate which they can file away, and we hope in time will be accepted in many or all of the states of the Union We cannot have a compulsory national board since the police powers are with the state, but a voluntary board is certainly feasible and can have general acceptance It only requires reasonable concessions from the existing agencies A national board, to deserve and secure general acceptance, must maintain a higher standard than a board whose examinations can legally be made compulsory The law contemplates and enforces only ordinary or average standards, so that this voluntary board should be placed on a much higher standard A man does not have to take the examination of this board if he does not want to, and therefore the standard can be and should be made higher than if it were a compulsory board

Should such a board be controlled by the government or be a federal body? The answer is that it is neither possible in fact nor desirable in theory As a central board cannot have the official endorsement of the government, it should be allied with a teaching foundation of high standard and of national scope This board is allied with the Carnegie Foundation, one of the widest scope, one which has done excellent work in elevating the standards of general and preliminary education The Carnegie Foundation has given the board $15,000 a year The Army Medical Museum has provided spacious rooms for conducting the examinations in a building which contains the largest medical library and one of the best collections of pathologic specimens in America These are available to the applicants while in Washington preparing for the examination The army and navy medical schools and the laboratory of the Public Health Service offer more than ample facilities for conducting a thorough oral, written and laboratory examination in all of the branches, including specialties The laboratory for operative surgery in the naval school is easily the best we have seen The chemical laboratories in each of the three government services are both commodious and complete The Roentgen departments are well appointed, and there are abundant microscopes, dark room for the use of ophthalmoscopes etc

The clinical advantages offered by the government hospitals could not be better or more varied The full capacity of the several government hospitals is about 5,000 patients, certainly sufficient to offer every facility for clinical examination

The greatest advantage which Washington offers over other places is that an assistant or substitute for any one of the regular examiners, in case of illness or other unavoidable absence, could be furnished on short notice, as there are specialists in all departments, members of the respective corps, detailed in the schools and laboratories and free from the demands of private practice The board consists of fifteen members The constitution has been amended to provide for two additional representatives from the Federation of State Medical Boards as soon as vacancies occur in 1918 Then six members will represent the government services, and three will represent the Federation of the State Medical Boards The remaining six members will be chosen at large, with due reference to geographic distribution, but not necessarily representing any association

Relationship with the Government Medical Services

THE ARMY

Dr W C Gorgas, Surgeon-General, United States Army The formation of this national board has been of great interest to the medical department of the army as a possible medium of increasing our reserve corps Heretofore the function of the medical corps of the army has been to take care of the regular army in time of peace, but during most of its existence the regular army has been at war When the nation was not at war we had the Indian wars on our hands

Before the Civil War, the regular army comprised 25,000 men, and it did not take a large corps of medical officers to look after the sick When the Civil War broke out there were seven regular medical officers to each thousand men, and they were greatly handicapped and played very little part After the Civil War the regular army returned to its previous proportions, and was about the same when the Spanish-American War broke out The lack of adequate care of the sick during that war was so striking that a board was officially called to look into the subject, and this board made several recommendations which the government adopted The recommendations of the Dodge Commission were briefly that there should be seven regular medical officers per thousand men and that provision should be made for hospitals with necessary delicacies Then came the question of improvement in transportation, whereby the medical supplies could be sent to the front

In 1898 the Medical Corps was increased to the ratio suggested by the Dodge Commission, seven per thousand men, but the army has also been increased to about 106,000 or 107,000, so that we now have only five medical men to each thousand To meet expansion in cases of war, a law was enacted authorizing the organization of the Medical Reserve Corps This has been brought up to about 1,500 men, and steps have been taken, more or less, to prepare the men for actual war service The Dodge Commission had in view a smaller army and less preparation than we now have in view They recommended stores for four times the regular army in time of peace, and the personnel and organization of our present reserve corps is to be established on the same basis Much depends on the appropriations that have been made We have medical supplies of a permanent character stored for 250,000 men We have a reserve corps to man that number of men, but the training of the reserve corps has to be restricted on account of appropriations We cannot order men to the various camps or put men in the field or pay them for the time they put in with the troops We are on the eve of an expansion and some method of expanding the reserve corps is also very essential

A bill at present before Congress contemplates bringing the regular army up to 140 000 men and increasing the regular medical corps in the ratio of five per thousand men The enlisted personnel of the medical corps can be increased under the present law as the authorities see fit The bill contemplates in three years a total army of 400 000 men, one third to be enlisted each year The bill contemplates a second increment of 400,000 men, so that ultimately we would have an army of nearly a million men The proper manning of this number of men on a war footing would require about 10,000 medical men

I have taken the ground that the medical care of 140,000 men would require at least seven medical officers per thousand, and an enlisted force of fifty per thousand But that contemplates merely the executive care and care of the regular army Our great function is the training of these 10,000 men that we hope to get into the Medical Reserve Corps To accomplish this we should have as large a number of regular officers commissioned in the army and noncommissioned officers as Congress can afford That will give ten per thousand men to whom we can give a certain amount of training, but if they give us 20,000 we could scatter 10 000 regular officers to serve with the troops and accomplish much more I think the National Board of Medical Examiners will be a great measure for recruiting our reserve corps This board has many other advantages, but I simply advocate it from the army point of view So far as the army is concerned, it will certainly be supported

THE NAVY

Dr W C Braisted, Surgeon-General, United States Navy The idea of a central examining board whose certificate should be of such high character that its acceptance by every state, territory and possession of the United States would be assured has been in the minds of many of the profession for the past twenty years We medical officers of the navy feel that physicians should be entitled to practice within our own country at any time or place As medical officers of the navy, our duties are constantly shifting us from place to place, bringing us under ever-changing conditions at the most unexpected times In times of emergency, in war or disaster, in situations in which no other professional help is available, we feel that we should be protected by some provision of this kind to make our services of full value to the nation The possession of a certificate of the national medical examining board by an applicant for the Naval Medical Service would undoubtedly be of great value in showing his fitness for the medical corps of the navy, in either the active or the reserve corps

What has been outlined describes in the main the relationship of the navy to the national medical examining board The navy has no special relationship with the contemplated board In national movements the services are frequently, almost daily, called on to assist and help to establish and organize measures for the nation's welfare and advancement. This movement to establish a national medical examining board is one of these great endeavors for the country's welfare, and it thus becomes our duty, as servants of the people, to attempt to aid by every means in our power your efforts in this direction

THE PUBLIC HEALTH SERVICE

Dr John W Kerr, Assistant Surgeon-General, United States Public Health Service (representing Surgeon-General Rupert Blue) Surgeon-General Blue desires to do whatever he may to elevate the requirements and the standing of those engaged in the practice of medicine He feels that by reason of a movement of this character it would be possible for our diplomas and requirements in this country to be accepted in greater degree by other countries It is the desire of Surgeon-General Blue by every means possible to stimulate interest in the advancement of the public health and encourage and stimulate the medical profession to engage in this work to a greater degree

The surgeon-general's connection with the board must of necessity be of an unofficial character He believes that eventually it will be practicable by this means for the government to recruit for the services to which I belong and to provide for greater interest in public health work and to favor appointments in time of epidemics without additional examination

Relationship with State Medical Licensing Boards

Dr Herbert Harlan, President of the State Medical Examining Board of Maryland, Baltimore Protection of the people is a state police function, and without an amendment to the constitution of the United States cannot be taken over by the national government Such an amendment is not to be hoped for State medical examining boards must continue, but as a large number of state boards (forty-one) have the legal authority to recognize, as sufficient guarantee of fitness, examinations conducted by boards of other states—examinations in regard to the conduct of which, in many instances, little is known and nothing inquired into—there is no legal objection to a change of statute granting a state board the authority to recognize the certificate or diploma of a national board as sufficient evidence of medical qualification, but only if, in the good judgment of the state board, the examinations, written, oral and practical, conducted by the national board are of such a character as to justify its acceptance

Early in December I wrote to the secretaries of sixty-three boards of fifty-three states and territories, asking whether each board had the power to accept the examination of a national board in lieu of their own examination Forty boards (in thirty-eight states) answered "No," and four "Yes", two were doubtful and two noncommittal

In reply to the question whether the board would be willing to license physicians who had passed the national board's examination without requiring them to take their own, seventeen replies were received, eight negative and nine affirmative Twenty-three states would be willing to ask their legislatures to amend the laws so as to give them power to do so

The answers to another question show that the present organization of the board and its plan of continuance is satisfactory to twenty-three and unsatisfactory to six, while thirteen would like some modifications

To summarize, only a few boards have legal authority at this time to accept the national board, probably eight Of those having no authority, however, 71 per cent expressed themselves as willing to ask for legislation enabling them to do so

It is expected that each state board will exact the same fee for recognition of the examination of the national board that they do now for the recognition of the license by another state

The success of this movement to establish a national board of medical examiners depends on the acceptance of its certificate of proficiency by all, or nearly all, of the various state boards

Educational Standards

Dr. Victor C. Vaughan, Ann Arbor, Mich It is a matter of great importance what standards are adopted by this examining board after it goes into existence and begins its work In the first place, we will expect that those who come before the board shall have had a fundamentally broad education, that each applicant shall at least know how to use his own language or the English language correctly In the second place, it will be expected that for scientific and medical purposes, at least, each applicant shall know either German or French, or both So far as the physical sciences are concerned, there can be no question that medicine is nothing more nor less than the application of the facts of biology, physics and chemistry to the prevention and cure of disease

In recent years I have failed to see any distinction between the laboratory man and the clinician Within the last twelve months it has been my good fortune to visit every important medical school in the United States I found last week a distinguished professor of clinical medicine in one of the great schools in New York trying to separate a special globulin from the blood Of course, I was quite at home in physiologic chemistry I found another man in one of the large schools trying to crystallize a poisonous substance from the blood of a uremic patient.

It is the unanimous opinion of the members of this prospective board that at least two years of college work, in addition to the high school course, should be demanded for admission to an examination before this board To demand less would be to go back. As we have been told, nine states already demand and three states more have notified that they will demand it, and there is scarcely any doubt that within a few years the majority of the states will be demanding it.

You have heard the surgeon-general of the army telling us that passing this examination would admit to the reserve medical corps of the army With this understanding it would be absolutely necessary that the men who pass this board shall have not only a general but also a somewhat specific knowledge of camp sanitation and of the wounds of war I cannot see any way of getting around this I am sure the medical profession would not have it otherwise. It was my good fortune to spend a short time in the army in 1898, and I recall today very vividly the fact that 20,000 of the 100,000 young men who enlisted in the service of this country were either flat on their backs sick, dead or dying of typhoid within six weeks I recognize what unpreparedness is responsible for, and I am sure the medical profession was not to blame for that in 1890, and does not want to be blamed for anything similar to it that may arise in the future.

Details of Operation and Examination

Dr Isadore Dyer, New Orleans, discussed the constitution and by-laws for a national board of medical examiners and presented specimen blanks to be used in connection with the examinations

Discussion on The National Board of Medical Examiners

Dr C St Clair Drake, Springfield, Ill There can be no controversy as to the advantages which would accrue to the members of the medical profession if there could be devised some plan whereby one medical licensure would permit practice in any and all parts of the United States The continued efforts to establish and extend interstate reciprocity in medical licensure bears evidence of a firm and growing acceptance of the value and justice of such an arrangement.

Legal obstacles however, such as have always stood in the way of nationwide licensure by the federal government, remain in Illinois, as well as in other states as barriers to participation in the plan of the national board

Under the Illinois law, the state board of health is charged with certain specific duties relative to the examination and licensure of physicians, and it has been repeatedly held that a duty and authority so imposed cannot be delegated to extragovernmental organizations Certainly under the existing Illinois law, the state board of health could not turn over its examining and licensing function to the National Board of Medical Examiners, nor could the state board of health accept the certificate of the national board in lieu of examination as subscribed by law

In an opinion recently rendered by the attorney-general of Illinois, it is definitely stated that any law enacted by the general assembly providing for the delegation of the examining and licensing power to an extragovernmental organization of any kind would be construed as class legislation and would consequently be declared void

It would be entirely consistent with the medical practice acts now in force in many of the states to create a general commission of medical examiners, to be made up preferably of the various state examining and licensing boards This conference or commission could formulate the rules by which each board could have equal voice with any other in control of the organization These rules would also specify the manner in which medical examinations would be conducted in the several states, the subjects to be covered and the relative weight and importance to be given to each subject included in the examination The rules would be such as to guarantee, so far as practicable, absolute uniformity in character of questions, arrangement of subjects, and detailed methods of examination to be employed by all boards party to the conference or commission

The rules thus formulated would be presented and adopted as the rules of the individual states, so that in each state they would become the legal and official rules

One of the important functions of the commission would be the preparation of examination questions for use by the component boards A sufficient number of physicians, members of the different boards, could be assigned to the preparation of the questions The questions so prepared would be transmitted in sealed packages to the various states in which examinations were to be held, and could be formally adopted by the individual boards, the seals not to be broken, however, except in the presence of the assembled candidates for licensure

As I see it, practically the same results can be obtained by the commission outlined, as by the National Board of Medical Examiners, with the essential difference that the former could operate in harmony with the laws now existing in Illinois, while the latter, being purely an extragovernmental and voluntary agency, cannot in the opinion of the attorney-general of Illinois be utilized lawfully by Illinois and certain other states

(To be continued)

NEW YORK ACADEMY OF MEDICINE

Regular Meeting held Jan 6 1916

METHODS OF PRECISION IN DIAGNOSIS OF SYPHILIS

Serum Diagnosis of Syphilis

Dr. Homer F Swift The value of the Wassermann reaction as a diagnostic procedure has been called into question This is because it presents a mechanism in immunity hitherto unrecognized In performing the test, five different biologic substances are employed, four of which may be considered as reagents which have not the fixed value of chemical bodies, but which vary in their properties according to the method of preparation, age, manner of preserving and other factors which are not understood Because of the lack of uniformity in performing the test, the results should be judged from the clinical point of view If the reports from a laboratory vary to any marked degree when the serums from a group of patients are submitted from time to time, it is safe to conclude that the methods employed in that laboratory are not well standardized Whatever level is chosen can be fairly closely maintained by paying attention to the following points 1 One should have a certain standard for the various components of the hemolytic system which must be tested each day 2 One should use several antigens and compare a new one with old ones of known value before accepting it 3 One should insert as controls not only serums which on the previous day gave strong positive and completely negative reactions, but also a serum which has given partial fixation This is the most important control, for by means of it one is always able to determine whether his reactions are of approximately the same intensity from day to day This uniform level of reactions is especially required when the serum of a patient is to be tested after a provocative injection of salvarsan The antigen with the most constant value is the cholesterin reinforced alcoholic extract of human or guinea-pig hearts, which also gives the highest percentage of positive reactions in all stages of syphilis, but especially in the late forms, it also persists longer in a patient under treatment The chief criticism brought against it is that it gives too high a percentage of reactions in nonsyphilitic patients, but with proper precautions the occurrence of nonspecific reactions is rare In the Wassermann there are group reactions as well as in other diseases caused by the spirochete, namely yaws and relapsing fever Trypanosomiasis and malaria also react positively and are amenable to salvarsan treatment In tuberculosis, malignant disease and diabetes the reaction has been reported positive, but this often may be explained by the presence of a concomitant syphilis In certain of the acute infections, as scarlet fever, pneumonia and poliomyelitis, a transient positive reaction is occasionally encountered, but it disappears with or shortly after the crisis and is never encountered in the cerebrospinal fluid of these patients The demonstration of the *Spirochaeta pallida* in a suspicious ulcer proves the lesion to be syphilitic, the demonstration of a positive Wassermann reaction proves that generalized distribution of the virus has taken place, and the earlier diagnosis is made and treatment instituted, the better is the chance of complete eradication of the disease It is very important to recognize the comparative value of the Wassermann reaction and spirochete search Disappearing reactions are better indicators of sufficiency of treatment in late syphilis than in the early stage of the disease A persistent positive reaction indicates the presence of syphilis somewhere in the body, and the first three or four years of treatment should be continued until the reactions remain negative With reactions that cannot be influenced, a course of treatment should be given annually In aortitis, persistent reactions while the patient is under mercury and salvarsan disappeared on continued administration of iodids Because of the variability in the various reagents and lack of uniformity in performing the test in various laboratories, it is essential that there should be close cooperation between the laboratory and the clinician, for the clinician should be the interpreter of the reaction

Study of the Cerebrospinal Fluid, and Its Value to the Practitioner

Dr George Draper The four examinations to which the spinal fluid is subjected are the cell count, globulin determination, Wassermann reaction and the Lange gold test changes in the cerebrospinal fluid, such as definite increase of pressure, multiplication of cells, positive globulin, no matter how faint, and positive Wassermann reactions in amounts of 1 c c or less The cerebrospinal fluid shows changes in 100 per cent of the early cases The globulin test is the first to appear positive and the last to go There may be marked pathologic changes in the fluid in cases of late syphilis for long periods of time before any signs or symptoms develop All cases of frank tabes, paresis and cerebrospinal syphilis have pathologic fluids In a certain group of syphilitics with vagus nerve disturbances, the spinal fluid may be normal in all points except the globulin In [illegible]dical Ser[illegible]; the isolated globulin finding becomes highly [illegible] for meningeal involvement of syphilitic nature ing [illegible] the ac[illegible] treatment should be instituted in such cases

Value of the Colloidal Gold Test in the Diagnosis and Prognosis of Syphilis of the Central Nervous System

Dr John A Fordyce It cannot be emphasized too frequently or too emphatically that the fate of the syphilitic individual depends largely on the early diagnosis of his infection and the intensity with which the treatment is carried out in the first six months It is in the accomplishment of this purpose that the modern aids to diagnosis have rendered the practitioner invaluable service It is impossible for even a trained observer to recognize by his sense of sight and touch alone all that can be revealed by the laboratory Chancroids frequently harbor the organism of syphilis, and owing to the longer incubation period of the latter, do not develop their characteristic features until after the expiration of two or three weeks, or they may entirely fail to develop any induration The secretion of all these lesions should be searched for the *Spirochaeta pallida,* and with failure to find it, a favorable prognosis should be withheld until repeated examinations, including the Wassermann test, have been made The dark field is especially valuable in developing chancres before they acquire their clinical characteristics The tabetic syndrome may be simulated by the multiple neuritis of diabetes or alcoholism, and the real nature of the trouble revealed only by the spinal fluid analysis and the blood test On the other hand, patients with syphilitic involvement of the central nervous system and suffering from obscure pains, febrile attacks, irritability, gastric and rectal crises, memory failure, etc, are often treated for years for neurasthenia, rheumatism, neuritis, surgical affections and various other conditions In the light of recent investigations, an analysis of the spinal fluid is not complete unless the colloidal gold test is performed in addition to the Wassermann reaction and the cytologic and chemical examination There is, as a rule, a parallelism between it and the other positive findings in the fluid The typical paretic curve has been encountered in every case of paresis examined, and in three cases has been reversed to the syphilitic curve This improvement did not, however, run parallel with the abatement of clinical symptoms, as one patient who, in addition, was negative in all the other laboratory findings, was slowly deteriorating in spite of treatment pushed to the point of tolerance Definitely syphilitic processes, as cerebral endarteritis, abortive or stationary forms of tabes and some types of cerebrospinal syphilis may give a completely negative Wassermann It is in these cases that the gold test is of value in demonstrating the syphilitic nature of the conditions Its greatest value, however, is in distinguishing between paresis and the conditions which simulate it, as well as its prognostic significance in tabetics who show no mental impairment but give a paretic curve Postmortem findings have shown that the anatomic changes in paresis may long antedate clinical manifestations In patients who are under continuous observation, and especially those who are receiving intraspinal treatment in whom the fluid can be examined at regular intervals, the presence or development of the paretic curve should excite a strong suspicion that later these patients may develop the clinical syndrome of paresis, and I am advising the family or business associates of such patients of the possibilities in the case Active treatment in these cases may anticipate, delay, or arrest the degenerative cerebral changes

DISCUSSION

Dr Sidney R Miller, Baltimore There can be no argument concerning the nonspecificity of the Wassermann reaction in the Ehrlich sense of the term There is little danger of our seeing cases of yaws, recurrent fever and frambesia in this part of the world, and practically the only other disease which has ever given us questionable results has been malaria, but this condition is always easily ruled out by finding the malarial parasites, and in a failure to do this, a course of quinin, followed by a second Wassermann, will usually decide a doubtful case As a result of the experience of five different laboratories, we have come to feel that an unequivocal positive Wassermann reaction, preferably with three, but not less than with two, in a technic suitably controlled in which accuracy of result has not been sacrificed to delicacy of method, is clinically a specific evidence of existing syphilis Our experience has been by no means unique, in that the Wassermann reaction has cleared up most difficult cases, and in a number of instances has clearly shown the casual or constant etiologic relationship of syphilis to the diseases under consideration The point which needs the greatest emphasis however, is that the closest cooperation must exist between the laboratory worker and the clinicians in the ward The attempt to divorce one from the other is bound to lead to dangerous misinterpretations The fallacy of the statement that our treatment of syphilis has not been advanced since the introduction of the Wassermann reaction will become apparent to any one who calmly analyzes the statement No doubt patients have been treated who were not suffering from syphilis, but rather from a faulty application of the Wassermann test The harm done by such misplaced therapy is nothing as compared with the good that has been achieved on the great mass of unfortunate sufferers Out of a series of approximately 1,500 Wassermann reaction tests in which the serum or spinal fluid was tested against three different antigens, the results were absolutely parallel in over 97 per cent of the cases In seven cases fixation was given alone by the cholesterinized antigen In all of these a subsequent lumbar puncture revealed the fact that the individual was suffering from some type of syphilis of the central nervous system This brings up two points which need particular emphasis 1 A suspected spinal fluid should not be regarded as negative unless it is so when ten times the original volume suggested by Wassermann is used in the reaction 2 Physicians should demand a report which clearly states against how many antigens and in what amounts a spinal fluid or serum has been tested

Dr Edward D Fisher I would place the diagnosis of syphilis much more surely on clinical observations than on the laboratory findings The clinical side has been studied for so many years that a pretty exact knowledge of the manifestations of syphilis of the nervous system has been established In this connection it might be mentioned that we have syphilis of the heart, of the lungs, of the liver, of any organ, that syphilis, in other words, has a selective choice as to situation Probably more than 10 per cent of the patients affected with syphilis have disease of the central nervous system Again there is a selective choice of certain parts of the nervous system, in some cases there might be involvement of the meninges and blood vessels, and in others the cell structure That has been observed clinically by Mott of London when he divides cases into the meningovascular, and cellular or parenchymatous, as tabes and general paresis In my early experience with the early symptoms of syphilis I found that one sometimes got a basilar meningitis and ocular paralysis, and that under proper treatment these conditions almost invariably clear up There are some clinical conditions in respect to which we seem to agree, and one of these is that paresis is rarely preceded by tabes if the latter is typical in character

Dr Sigmund Politzer It is the duty of the practitioner when he sees a case of primary syphilis to make an examination for spirochetes in the initial lesion, because syphilis during the first few weeks or months is curable The diagnosis may be made by the dark field illumination, but this is not the only way The India ink method is absolutely reliable The majority of syphilitics show during the first weeks some irritation of the central nervous system, but only a small proportion develop cerebrospinal syphilis, and to treat these early cases for cerebrospinal syphilis by intraspinal injection is an unjustifiable procedure There is no single test that has the value of the Wassermann, but it must be interpreted with intelligence So far as the diagnosis of syphilis goes, I feel that we should be lost without the Wassermann test In doubtful cases this test gives definite information, and subsequent treatment has demonstrated its correctness

Current Medical Literatu

AMERICAN

Titles marked with an asterisk (*) are abstracted be

American Journal of Diseases of Children, Ch

February, XI No 2, pp 85 176

1 *Tuberculosis in Infancy C H Dunn Boston
2 Types of Hydrocephalus Their Differentiation an
C H Frazier Philadelphia
3 Metabolism Studies in Hemophilia M Kahn, Pittsb
4 Carmin Test for Duration of Complete Food Passage
and Children A Hymanson New York

1 Tuberculosis in Infancy—In a series of sixty-tw sive necropsies, Dunn says, tuberculosis was found in five, and was considered the direct cause of death in three cases, and as the contributing cause in the othe A primary lesion was found at the portal of ent twenty-two of the twenty-five postmortems The three in which a primary lesion was not found at the por entry all showed chronic tuberculosis of the bron lymph nodes, but none of the mesenteric lymph nodes primary lesion was found in the lung in twenty cases in the intestine in two cases If we add to the t cases the three in which the only chronic lesions found in the bronchial lymph nodes we have a rat twenty-three cases of infection through the lur to cases of infection through the intestine The favo te tions were at the apex and near the hilus The lymph nodes were found tuberculous in the twenty having a primary lesion in the lung, and in three in which no primary lesion was found They were inv alone in sixteen cases, including the three without ev pulmonary lesion The mesenteric lymph nodes were tub culous in addition to the bronchial lymph nodes in seve cases having a primary lesion in the lung, and were involve alone in the two cases having a primary lesion in the intestine Tuberculous ulceration of the intestinal mucous membrane was found in seven cases beside the two in this lesion was considered primary In all cases the were multiple

Chronic tuberculosis of the lymph nodes was foun every case The brain was not examined in three c and no lesion of the meninges was found in two c In nineteen cases a tuberculous meningitis was found w was the immediate cause of death In only five cases w animal inoculations made to determine whether the infect was with a human or with a bovine type of bacillus T bovine type was found in one case, and the human ty in four cases The case in which the bovine type of bacillu was found was one of those having a primary lesion in the intestine and the one known to have been fed with contaminated milk The four cases in which a human type of bacillus was found included one of the cases in which there was no apparent primary lesion In four cases was there a definite history of exposure to tubercul obtained

American Journal of Insanity, Baltimore

January LXXII No 3 pp 427 589

5 Survey of Defective Delinquents Under Care of Massach
State Board of Insanity A. W Stearns Boston
6 *Sensory Phenomena in Epilepsy E M Auer Skillman N
7 *Correlation of Clinical and Serologic Findings in Paresis and
brospinal Syphilis I A Darling, Warren Pa and P B
comb Osawatomie Kan
8 Functions of Psychologist in Hospital for Insane. S L Fr
Washington D C
9 Recollections of Psychiatrist J M Keniston
10 Dangers of Continuous Bath W A White Washington D C
11 *Treatment of Paresis and Tabes Dorsalis by Salvarsanized Serum
H A Cotton Trenton N J
12 *Focal Lesions of Cortex of Left Angular Gyrus in Two Cases of
Late Catatonia E E Southard and M M Canavan, Boston

6 Sensory Phenomena in Epilepsy—Concerning the association of migraine to epilepsy, Auer says, one must in considering the influence of heredity, the onset during earl life the periodicity of attacks, the occurrence of prodrom the unilaterality, exhaustion, chilliness and the

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l paresthesias and transitory aphasia, observed ditions, admit a justifiable ground for relationship

s and **Cerebrospinal Syphilis**—While examining ns given at staff meetings at the Warren State n 697 routine admissions, it was found by Darling omb that eighty-seven (12 5 per cent) were con- be syphilitic diseases Of these sixty-nine (9 9 per ere, in the opinion of the majority, unquestionable general paralysis and five (0 7 per cent) were l syphilis Concerning the remaining thirteen er cent) there was a diversity of opinion By reful analysis of these cases it was determined t of the sixty-nine paretics had had negative ann reactions on the blood, this being 11 6 per cent ose suffering from the disease Three, or 60 per the cerebrospinal syphilitics also failed to show ve reaction on the blood In all these cases the mann reaction on the spinal fluid was positive

Treatment of Paresis and Tabes Dorsalis—Cotton isizes the fact that in the use of salvarsanized serum ve an agent which does cause definite arrest in s, which arrest includes improvement in the clinical toms physical signs and a corresponding change in iologic reactions from positive to negative To be ve the case must be treated in the early stages, as ced stages show no favorable reaction to the treat- Th length of time is not always an indication of the ity of the symptoms, but the majority of cases cannot lped after two or three years have elapsed Treat- must be persistent and uninterrupted, grading the of dose and frequency of treatment to the condition e patient Taboparesis should be cautiously treated, with small doses and not oftener than every three The remission caused by the treatment cannot be ed to spontaneous treatment, for the percentage in he former is 35 5 per cent and in the latter case only per cent The change in the cell count, globulin content, blood and spinal fluid Wassermann reactions are the direct result of the treatment and not to be compared with the ion found in untreated cases of paresis The efficacy treatment depends not on the method used but on age of the disease, hence the necessity for early diag- in paresis and prompt treatment as soon as possible

Focal Lesions of Cortex of Angular Gyrus—Southard Canavan present two cases of chronic lesion of the angular gyrus which received the clinical diagnosis of entia praecox One case showed a cyst of softening d the other a solitary tubercle Decidedly atypical is the ot onset of the first case, at 41, the second case had onset at 36 The authors are especially interested the fact that the isolated lesions in these cases are in he parietal region

American Journal of Medical Sciences, Philadelphia

February, CLI No 2 pp 157 312

*Management of Patients with Chronic Renal Disease T C Janeway, Baltimore
Relation of Prognostic Factors to Treatment in Diabetes Mellitus A B Foster, New York
Effect of Exercise on Carbohydrate Tolerance in Diabetes T B Barringer, Jr, New York
Some Aspects of Clinical Study of Respiration, Significance of Alveolar Air Analyses F W Peabody, Boston
Historical Sketch of Development of Duodenal Tube M Einhorn, New York
Tonsillar Endamebiasis and Thyroid Disturbances J S Evans, W S Middleton, Madison, Wis, and A J Smith, Philadelphia
Pathognomonic Alterations of Cerebrospinal Fluid in Syphilis of Nervous System J Collins, New York
*Spontaneous Pneumothorax L Hamman, Baltimore
Occurrence of Arteritis in Meningitis J W McMeans, Pittsburgh
22 Roentgen Expert Witness E H Skinner, Kansas City, Mo
23 Clinical Study of Chronic Diarrhea D Roberts, New York
24 *Metabolism in Case of Myasthenia Gravis A Bookman and A A Epstein, New York

13 Also published in *Bulletin of Medical and Chirurgical Faculty of Maryland*, Baltimore, January, viii, No 7

15 **Exercise and Carbohydrates in Diabetes**—The appa- us used by Barringer in the three cases cited consisted umb bells weighing from 10 to 40 pounds each, and steel bars varying between 25 and 80 pounds in weight, with which different series of movements were carried out The exercises were of a concentrated form, and were given an hour daily, three days in the week, generally in the late afternoon Each series of movements lasted from thirty to 120 seconds, and six to eight were given at each exercise period, so that the actual working time varied between four and sixteen minutes for the hour The results were very satisfactory

18 **Tonsillar Endamebiasis and Thyroid Disturbances**—Tonsillar lesions of an infective cryptic character were found by the authors in 22 8 per cent , and nasal together with tonsillar lesions existed in 90 per cent of 362 goitrous individuals examined from this standpoint In typically diseased tonsils, out of thirty-four cases examined microscopically, 97 per cent were found to harbor *Endamoeba gingivalis* (gros) in the tonsillar crypts Of sixteen individuals of this group who after treatment by means of emetin hydrochlorid were reexamined, thirteen, or 81 per cent, were shown no longer to have endamebas in the cryptal contents In twenty-three persons to whom emetin was administered a reduction in the bulk of the goiter was appreciable in eighteen, and of seven dysthyroid cases included in this group of those treated, six were benefited in degrees varying from slight amelioration to apparent cure

20 **Spontaneous Pneumothorax**—Several interesting cases are cited by Hamman Case 1—A young man during a cold has sudden pain in the right side A few days later, Dec 2, 1909, examination reveals a complete right pneumothorax Uneventful recovery in six weeks Nov 4, 1910, after lifting a weight, pain in the left side Examination reveals complete left pneumothorax Uneventful recovery in four weeks Recurrence of left pneumothorax on Dec 24, 1910 In October, 1913, cough, sputum, signs of tuberculous infiltration in both upper lobes, tubercle bacilli in sputum Case 2—Healthy young man has sudden pain in left side of chest followed by dyspnea on exertion, examination the following morning, Nov 30, 1910, reveals complete left pneumothorax, uneventful recovery in four weeks, has remained well since Case 3—Healthy man, aged 38 years, has sudden pain on left side, followed by dyspnea on exertion, examination reveals left pneumothorax, uneventful recovery in four weeks, has remained well Case 4—Young man, aged 35 years, with relatively inactive chronic pulmonary tuberculosis, suddenly has severe pain in the left side Examination reveals left pneumothorax No constitutional symptoms develop and the pneumothorax heals uneventfully in five weeks Case 5—A healthy man, aged 29 years, suddenly has severe pain in the right side on the morning of July 29, 1914, followed by a little dyspnea on exertion Examination Aug 17, 1914, reveals a right-sided pneumothorax which has almost completely cleared up Patient has remained well since These five cases illustrate (1) how insidious may be the onset of pneumothorax, (2) what few symptoms it may occasion, (3) how easily on a casual examination the condition may be overlooked, (4) the perfectly benign course of the affection, (5) the occurrence of an insidious benign type of pneumothorax in perfectly healthy individuals as well as in those with manifest pulmonary disease

24 **Myasthenia Gravis**—This case of myasthenia gravis presented as unusual symptoms, bronzing of the skin, pigmentation of the buccal mucous membrane and high blood pressure The metabolism of calcium, magnesium, phosphorus, sulphur, and nitrogen and the ammonia excretion were studied by Bookman and Epstein with the patient at rest, while taking exercise, during the administration of epinephrin, of thymus gland, and of calcium, and presented no abnormal features The excretion of creatinin was below normal There was at times a considerable excretion of creatin Ovarian and testicular substance were also administered Neither the glandular preparations nor the calcium appeared to have any influence on the clinical course

Arizona Medical Journal, Phoenix

January IV, No 1, pp 1 10

25 Physician's Relation to His Patients W W Wilkinson Phoenix
26 Some Newer Ideas on Vaccines W W Watkins, Phoenix

attack of irregular pulse was observed, appearing at one time to be an intermittent heart block, at another time an arrhythmia perpetua In a second patient, a man, 33 years of age, suffering from rheumatic fever, an intermittent heart block was observed, which disappeared the same day as the joint symptoms ceased, and the temperature fell to normal

34 **Bactericidal Action of Serum on Microbes**—Sakagami states that the following microbes grow in normal serum *Staphylococcus pyogenes, Pneumococcus, Pseudotuberculosis, Streptococcus pyogenes* and *M catarrhalis* Normal serum has a small bactericidal action on the staphylococcus during the first hour of exposure, but after many hours its power decreases Serum heated to 60 C has no power Normal serum has no bactericidal power on the streptococcus Serum of tuberculous patients has smaller bactericidal power than normal serum on the staphylococcus and streptococcus Serum of those suffering from staphylococcal infections has a little stronger power than that of tuberculous patients The serum of those suffering from tuberculosis and staphylococcal infections at the same time has more power than the serum of those suffering from tuberculosis only The bactericidal action of Sakagami's own serum after he had been inoculated with cholera and typhoid mixed vaccine was noticeable on both these bacteria, but otherwise was unchanged

36 **Radical Treatment of Rheumatoid Arthritis**—The cardinal point of the treatment, Rowlands says, is disinfection of the original focus, but it is only in the early cases that removal of the source of infection will at once cure the condition In the cases of longer standing the toxemia itself has also to be treated and for this purpose vaccine therapy has proved of great assistance Ontogenic vaccines should always be prepared, the use of stock cultures being of little avail The pathogenic organism can sometimes be isolated only with considerable difficulty, in such cases it is often possible to discover it in the urine, and this should always be examined if the organisms are not readily obtained elsewhere The dosage is a matter that greatly depends on the type of case as well as on individual features in the patient, such as age, in old people one has to be more careful to avoid unpleasant reactions In fairly acute cases Rowlands begins with a dose of five millions if the organism is a streptococcus, pneumococcus, or a diphtheroid bacillus, the dose being increased according to the reaction With the bacillus coli he begins with ten millions in acute cases, and in the chronic cases, on the other hand, he begins with five times these doses

He always aims at bringing about a slight exacerbation of the joint symptoms, such as swelling, heat, and pain If the patient is kept at rest this soon subsides, as a rule within a few days, but should there be much pain a local application of ice gives relief, when this subsidence has occurred the patient usually reports marked improvement The next dose following a rather acute reaction should not be increased and there should be no great reaction Following this the dose may now be increased until one has reached the following numbers, bacillus coli, and paratyphoid, two hundred millions, pneumococcus streptococcus, pyocyaneus and diphtheroid bacilli fifty millions There should be an interval of from seven to ten days between the injections and when there is marked improvement this may be increased to fourteen or twenty-one days the treatment should be continued for at least a year, and if possible the injection should be given in the evenings The usual forms of treatment should be administered simultaneously with the vaccine therapy, including attention to the general condition, removal to a bracing climate if possible, massage, baths, tonics and removal of sources of worry

Paris Médical

January 8 VI No 2 pp 41 56

39 Inability to Put Out the Tongue in Typhus. (Le signe de la langue dans le typhus exanthematique.) P Remlinger
40 Bridge and Reenforced Plaster Casts for the Wounded (Les appareils en plâtre armé dans la chirurgie de guerre.) M Deguy
41 Treatment of Trismus by Continuous Traction on Lower Jaw (Traitement du trismus par la traction continue du maxillaire intérieur) H Somen

Presse Médicale, Paris

January 6, XXIV, No 1 pp 1 8

42 Nervous Affections Entailed by Wounds in War and the Qı of Pensions (Les maladies de guerre du système nerve les conseils de reforme.) Grasset
43 Gas Gangrene and Gangrenous Infections in the Wounded grènes gazeuses et infections gangreneuses.) J Gatellier
44 Primary and Secondary Amputations for the Wounded moignons des amputations faites à l'avant) L. Desgouttes E Perrin
45 Decapitation of the Astragalus to Correct Talipes Equinus C secutive to War Wounds (Traitement de l'équinisme) D Fortunet

Revue Médicale de la Suisse Romande, Geneva

December, 1915 XXXV No 12, pp 913 1032

46 *Lessons from Observation of Belligerents' Military Medical Service (Expose des enseignements tirés de la guerre mondiale et appliques au service de sante de notre armée) Hauser
47 Otogenous Septicemia Five Cases (A propos de quelques cas de septico pyemie otogene.) G Frey
48 *Retrogression of Goiter under Influence of Continuous Disinfection of the Intestines Twelve New Cases Messerli
49 Angiokeratoma and Frostbite. (Angiokératôme et engelures) C Du Bois.
50 Technic and Advantages of Gwathmey s Method for General Anesthesia by Way of the Rectum (L'anesthesie générale par le rectum, par la méthode huile ether paraldéhyde) C G Cumston

46 **Lessons from the War**—Practically this same article was reviewed in these columns recently, p 153

48 **Retrogression of Goiter under Continuous Mild Purging and Disinfection of the Intestines**—This is Messerli's fourth publication on this subject The results of the treatment specified seem to be as striking as in his three previous series (Mentioned in The Journal, May 8, 1915, p 1618) The men were all recruits and several of the cases are illustrated "before and after" In the first case the circumference of the neck was reduced from 45 5 to 38 5 cm under twenty-nine days of treatment Parenchymatous goiter is extremely common at Basel where these measurements were made, and Messerli noticed that his own thyroid increased in size during his stay there, but it subsided to its normal outlines after he had taken 2 gm of salol a day for two weeks He never ventured to apply this treatment to much degenerated goiters, but with simple follicular enlargement and parenchymatous goiter some benefit was apparent in every instance He thinks that benefit from mild continuous purgation and disinfection sustains the theory of parasites in the drinking water as the cause of goiter

Archiv für Kinderheilkunde, Stuttgart

Nov 2 1915 LXV Nos 1 2 pp 1 160 Last indexed Nov 13 p 1762

51 Twenty Fifth Anniversary of Berlin Children s Hospital (Zum 25 Jahrestage des Bestandes des Kaiser und Kaiserin Friedrich Kinderkrankenhauses in Berlin) A Baginsky
52 *Potassium Iodid in Acute Disease of the Respiratory and Cardiovascular Apparatus (Jodkalium in der Behandlung der acuten entzundlichen Krankheitsformen des Respirations und Circulationsapparates) A Baginsky
53 Strophanthin for Failing Compensation (Strophanthin bei Compensationsstörungen des Herzens) A. Baginsky
54 Poisoning from Canned Vegetable. (Vergiftung mit Bacillus enteridis bei 3 Kindern) A. Baginsky
55 Blistering and Peeling of the Skin—Bullous Keratolysis, Five Cases (Zer Kenntnis der Epidermolysis bullosa) A. Baginsky
56 *Inherited Syphilis and the Wassermann Reaction (Hereditare Lues und Wassermannsche Reaction Untersuchungen an Muttern und Kindern) E. Steinert and E Flusser
57 *The Injurious Influence of High Arched Palate in Children and Means to Remedy It. (Der hohe Gaumen) R Landsberger

52 **Potassium Iodid in Pneumonia, Endocarditis, etc**—Baginsky deplores that so little attention has been paid to his statements in regard to the therapeutic action of potassium iodid in treatment of acute inflammatory processes in the organs of respiration and circulation in children His statements are based on both theoretical premises and wide practical experience. It is not a specific, but it proves a powerful aid for the child's organism, contending with severe toxic influences The symptoms calling for it are those from insufficiency of the respiratory and cardiovascular apparatus, whether the one or the other or both are involved in the disease process The iodid seems to act directly on the vessels and tissues of the pleura, pericardium and other serous membranes, facilitating the processes of diffusion and hence the secreting functions Six typical case in detail One girl of 12 had acute

60 Epidemic Superficial Mycosis (Eine in Krankenhäusern epidemisch auftretende Fadenpilzerkrankung der Haut—Ekzema marginatum Hebrae) W Fischer
po Ameba Dysentery (Zur Aetiologie der Amoebenruhr) M Hartmann, (Ueber Ruhramoeben) W Kruse
*Findings Before and After Test March (Aerztliche Beobachtungen an Teilnehmern eines Armee Gepäckmarsches) Thiele
The First Year of the War and the Physical Development of the Public School Children (Das erste Kriegsjahr und die grossstädtischen Volksschulkinder) A H Kettner
9 Simplified Technic for Microscopic Examination of Cerebrospinal Fluid (Zur mikroskopischen Untersuchung der Rückenmarksflüssigkeit) Alter

December 30, No 53, pp 1565 1588

80 Experiences with Treatment of Wounded Nerves and Nervous Affections in Soldiers (Erfahrungen über die Behandlung nervenverletzter und nervenkranker Soldaten) M Lewandowky
81 Successful Removal of Tumor Evidently Rooted in the Side Ventricle (Zwei Fälle von operativer Beseitigung von Gehirngeschwülsten) A Westphal
War and Internal Medicine (Ergebnisse der bisherigen Kriegserfahrungen auf dem Gebiete der inneren Medizin) Reckzeh (To be continued)
Stained Beer Agar Culture Mediums (Praktische Nährböden zur Diagnose von Cholera, Typhus und Dysenterie) L L. Sobel
84 Simple Apparatus for After Treatment of the Wounded (Einfache Apparate zur Behandlung Kriegsbeschädigter) A Alsberg
85 The Field Hospital in Antiquity (Verbandplätze und Kriegslazarette im Altertum) W Haberling
86 Social Service in the Hospitals. (Soziale Krankenhausfürsorge) J Schwalbe

74 **Localization of Foreign Bodies**—Schwarz gives an illustrated description of an improvised arrangement for roentgenoscopy with the tube under the table and one or two probes automatically adjusted on a standard above

77 **Capacity for Endurance in Men on Long March**—Thiele recorded for comparison the height and the weight, temperature, pulse and blood pressure before and after a long march, the men carrying the regular army equipment This outing march was organized by a turner society at Berlin, to train in exercises which form part of the regular work of troops on active service The greatest endurance was shown by men from 18 to 25, the drop in blood pressure averaged only 12 mm mercury Under 18, the drop averaged mm , in the older men it was 38 mm These figures show necessity for medical oversight of such exercises They emphasize further the importance of the medical officer with a troop guarding the older men against extreme exertion so far as possible

Medizinische Klinik, Berlin

Nov 14 1915, XI, No 46 pp 1253 1278

87 *Fractures (Ueber Knochenbruchbehandlung) E Braatz
88 Chemical Sterilization of Small Amounts of Water (Die Desinfektion kleinerer Trinkwassermengen durch chemische Mittel) O Spitta
89 *Causal Germ and Serotherapy of Infectious Jaundice II (Weitere experimentelle Untersuchungen uber die sogenannte Weilsche Krankheit) P Uhlenhuth and W Fromme.
90 Familial Acromegaly J Leva
91 Advantages of One per Thousand Silver Nitrate Solution in Treatment of Suppurating Wounds. (Behandlung eitriger und jauchender Wunden mit schwachen Silbernitratlosungen) J Löblowitz

November 21 No 47, pp 1279 1306

92 Pseudospastic Paresis with Tremor in Soldiers on Active Service (Ueber Myotonoclonia trepidans) H Oppenheim
93 Bacteriologic, Experiences in War Epidemics (Bakteriologische Erfahrungen über Kriegsseuchen) H Aronson Concluded in No 51
94 Fracture of the Heel Bone as Typical Injury on Man of War (Die Kompressionsfraktur des Calcaneus als typische Seekriegsverletzung) G Magnus
95 *Difference in Temperature in the Right and Left Axillae (Einseitige Steigerung der Korpertemperatur) R Wilzel
96 Pedunculated Skin Flap for Secondary Plastic Operation after Amputation (Zur Technik der sekundaren Hautlappenplastik bei Kriegsamputierten) H Hans
97 The Diazo and Urobilinogen Reactions in the Urine in Typhoid (Ueber den Nachweis, das Vorkommen und die klinische Wertung von Urobilinogen und Diazo im Harne Typhuskranker) K Pick
98 Typhus in Prisoners' Camp (Ueber Fleckfieber) O Muller (Commenced in No 45)

87 **Fractures**—Braatz describes a number of devices that have proved very useful in his experience with fractures As bedsteads are usually too short to apply extension properly in his private clinic he has the sides of the bed so that the bed measures 8⅓ feet at used by so that the bed dumb-bells weighing from A pro least (2 5 m) A dislocation accompanying a fracture should be reduced at the same time the fracture is treated Traction toward the side may accomplish this, as in a case cited A sliding carriage for the leg to rest on runs on two long rollers extending from side to side, instead of wheels He says of nail extension that there are a number of cases in which this is the only practicable measure, and it answers its purpose well The muscles as well as the bones are involved in the pathologic unit of a fracture, and the laws of physics and the biologic behavior of the muscles confirm that muscles can be stretched with the application of the least force when they are in semiflexion

89 **Spirochete and Serotherapy of Infectious Jaundice**—Uhlenhuth and Fromme remark that conditions are peculiarly favorable for research on infectious jaundice with guinea-pigs They do not develop the disease spontaneously nor contract it from infected guinea-pigs, but four days after intracardiac injection of 1 or 2 c c of defibrinated blood from an infected animal they begin to present the typical picture of Weil's disease, and the necropsy findings are likewise typical A spirochete was found in every instance in the liver and bile, more rarely in the blood and kidneys The spirochetes can be filtered out but no chemicals that were tried seemed to have a destructive action on them, not even a 1 1,000 solution of mercuric chlorid nor salvarsan On the other hand, 2 or 3 c c of serum from a convalescent, mixed with 1 c c of the virus blood and left in contact for thirty minutes, neutralized the virus so that the mixture was absolutely innocuous, the animals inoculated with the mixture showing no signs of the disease while the controls all sickened and died The convalescent serum was effectual even in the proportion of 0 01 c c to 1 c c of the virus blood It also displayed a pronounced curative action when injected into animals with infection already installed They call attention in particular to this latter fact, saying that it justifies the use of convalescents' serum in the clinic The serum of convalescent rabbits also displayed prophylactic and curative action They confidently assume that horses, sheep and asses can be utilized for the purpose, and that serotherapy of Weil's disease is thereby placed on a stable basis The spirochete is very delicate and does not coil in regular spirals In the succeeding number, Uhlenhuth and Fromme report the discovery of the spirochete in question with the Levaditi staining technic in the liver of a patient with Weil's disease

95 **Unilateral Fever**—A man of 44 was squeezed against a wall by a passing wagon He fell unconscious but no apparent serious injury resulted, beyond bruises One hour afterward the temperature in the right axilla was 39 5 C (103 F) and in the left axilla, 36 8 C. (98 F) Various thermometers were used and changed about They all recorded the same, and the next morning again, 39 2 in the right axilla and 36 8 in the left By noon the latter temperature prevailed on both sides The accident was followed by mutism and the pulse kept about at 66 for several days Welzel emphasizes that this case can be regarded as an absolutely authentic instance of unilateral rise in temperature in a patient with other symptoms of hysteria.

Munchener medizinische Wochenschrift, Munich

Dec 28 1915 LXII, No 52 pp 1781 1796

99 Roentgen Examination of the Heart to Determine Fitness for Military Service (Zur Rontgenuntersuchung des Herzens bei fraglicher Militartauglichkeit) F Groedel
100 *Atrophy of the Liver Following Trauma (Akute gelbe Leberatrophie—nach Unfall?) H Curschmann
101 Red Vision from Solanin Poisoning (Fall von Rotsehen nach Genuss der Samen von Solanum dulcamara L.) R Hilbert
102 *Ninhydrin Reaction in the Cerebrospinal Fluid in Tuberculous Meningitis (Untersuchung tuberkulös meningitischer Punktionsflussigkeiten mit Hilfe der Ninhydrinreaktion) E Nobel
103 *Sciatica and War (Ischias und Krieg) E Blind
104 Treatment of Stump after Amputation (Zur Behandlung der kegelförmigen ungedeckten Amputationsstümpfe, namentlich des Oberschenkels) F Franke
105 Usable Prothesis for Thumb and for Entire Arm (Ein brauchbarer Ersatz für den Daumen und ein künstlicher Arbeitsarm bei Exartikulation der Schulter) B Lange
106 Roentgen Localization of Foreign Bodies (Erfahrung mit dem Furstenauzirkel) R Seubert

107 Treatment of Incipient Ear Disease in the Field (Merkblatter fur Feldunterarzte IV) B Heine.
108 Treatment of Fracture of Upper Arm and Shoulder (Behandlung der Schussfrakturen des Oberarms und des Schultergelenks) A Schlesinger

100 **Acute Yellow Atrophy of the Liver from Trauma**—Curschmann remarks that the case reported is the third one of which he has knowledge in which the syndrome of acute yellow atrophy of the liver followed close on traumatic injury of the organ His little patient was a strong healthy boy of 2 who had quite outgrown a tendency to moderate rachitis He fell twice in one day on the back of a chair, striking the abdomen each time, and three days later signs of acute yellow atrophy of the liver developed, rapidly fatal

102 **The Ninhydrin Reaction in the Spinal Fluid in Tuberculous Meningitis.**—This is Nobel's second article in our exchange during the year bearing on the response of the cerebrospinal fluid to Abderhalden's ninhydrin test He applied it to a large number of spinal fluids, comparing the albumin content, ferments content, microscopic, bacteriologic and other findings with the response to the ninhydrin test The response to the latter was exceptionally pronounced in tuberculous meningitis, as he shows by the tabulated details in eleven cases The reaction was pronounced even after the albumin had been removed from the fluid In two instructive cases—one of pulmonary tuberculosis with cavities and one of miliary tuberculosis—the ninhydrin reaction was constantly negative and necropsy confirmed the integrity of the meninges Kafka's research has confirmed these findings Both Nobel and Kafka expatiate on the extreme sensitiveness of the test, positive findings not being conclusive. Nobel regards as the criterion a decided blue tint half a minute after the conclusion of the boiling A positive reaction is important in differentiating tuberculous meningitis from typhoid, pneumonia, septic infections and, in children, digestive disturbances, or gastro-intestinal catarrh In excluding these it has only the significance of any other single clinical phenomenon, like the leukopeny of measles, the enlarged spleen in typhoid and other phenomena which are not absolutely specific but taken in connection with other clinical phenomenon are highly suggestive. (Compare with editorial in THE JOURNAL, April 17, 1915, p 1332 Kafka's report of his findings was listed in these columns Nov 20, 1915, p 1859)

103 **Sciatica.**—Blind has been very successful in treating recent sciatica in soldiers by bloodless stretching of the nerve under local anesthesia or the first whiffs of ether, overstretching the nerve with the knee in extension, followed the same day with gymnastic exercises, including bending far forward with straightened knees Many of the patients extolled the benefit from the one effectual sitting after months of futile sweat baths, rubbing, etc Treatment is reenforced with superheated air, mud baths, electricity, massage, or vibration gymnastics as the case may be. Perseverance and determination on the part of the patient and encouragement by the physician may be necessary to ward off superposed hysteria Blind warns also that the supposed sciatica may be a symptom of unsuspected constitutional disease

Wiener klinische Wochenschrift, Vienna

Dec 9 1915 XXVIII No 49 pp 1337 1372

109 Gunshot and Shell Wounds of Larynx and Trachea Seventeen Cases K. Kofler and V Fruhwald.
110 *Tuberculin Treatment of Early Syphilis. (Die Tuberkulinbehandlung der Fruhlues) M Biach
111 Diarrhea from Presence of Anguillula. (Ueber Anguillula Erkrankung) A Arnstein
112 Experience in a Cholera Epidemic. (Ueber die Choleraepidemie in Brcka Juni bis Juli 1915) S Frankl and F Wengraf
113 Typhoid Simulating Typhus (Zur Frage des Flecktyphus auf dem galizischen Kriegsschauplatze.) W Spat
114 Rapid Restoration of Function after Operation on a Nerve. (Ueberraschend schneller Erfolg einer Nervenoperation.) R. Beck and E. Reither
115 Halting Stations for the Wounded (Ueber Krankenhaltstationen ihre Aufgaben und zweckentsprechenden Einrichtungen.) Pilzer

December 23 No 51 pp 1405 1432

116 Treatment of Whooping-Cough with Disease Products (Sputum) of Patients with Pertussis. (Ueber eine neue Behandlungsmethode des Keuchhustens.) R Kraus (Buenos Aires)*
117 Pathogenesis of Quincke's Edema P Neuda
118 Return of Kneejerk in Tabes under Tuberculin Treatment Four Cases (Ueber das Wiederauftreten des Patellarreflexes bei Tabikern durch Tuberkulinbehandlung) E Wodak.
119 Relapsing Fever (Ueber das Ruckfallfieber) Tobeitz.
120 Typhus. (Bemerkungen uber Flecktyphus.) Marcovich
121 Posttyphoid Tremor Resembling Paralysis Agitans. (Zur Kasuistik post typhoser Systemaffektionen) O Gross
122 Necessity for Operating Room on Hospital Train (Notwendigkeit von Operationswagen fur Spitalszuge) A. Bielka von Karltreu

110 **Induced Fever in Treatment of Early Syphilis**—Biach recalls Wagner's statistics which apparently show that any intercurrent febrile affection soon after contracting syphilis seems to modify the infection favorably, so that tabes and progressive paralysis do not follow later To induce artificially a febrile affection seems thus a justifiable procedure, and tuberculin is the simplest means for the purpose Biach applied this method of treatment to patients with positive Wassermann, with or without secondary manifestations The visible manifestations of the syphilis were at once influenced by the tuberculin or the febrile reaction to it, rapid retrogression being the rule The tuberculin was given in addition to the usual mercury or salvarsan treatment, but Biach gives no details as to the dosage He adds that the influence of the tuberculin on the Wassermann reaction was extremely interesting but does not enter into particulars

Zeitschrift für Tuberkulose, Leipzig

December 1915 XXV No 1 pp 1 80 Last indexed October 9 p 1315

123 *Natural and Artificial Heliotherapy of Lupus A Jesionek
124 *Reclining as a Factor in Hemoptysis. (Zur Behandlung der Hamoptoe) W Neumann
125 Trauma as a Factor in Pulmonary Tuberculosis. (Trauma und Lungentuberkulose. Vier Obergutachten) J Orth

123 **Heliotherapy in Lupus**—Jesionek is chief of the lupus sanatorium at Giessen and of the university clinic for skin diseases He applies the direct sunlight in treatment or the mercury quartz lamp rays without any artificial devices to enhance their potency or expel the blood The entire body is exposed, as he is convinced that the pigment generated in the epidermis by the rays is absorbed into the circulation to a certain extent and carried to the tuberculous foci where it exerts a therapeutic influence (A previous communication from him on this subject was summarized in THE JOURNAL, Jan 1, 1916, p 69) Lupus foci shielded against the light healed under the general heliotherapy, which can be explained only by the above assumption He gives an illustration of fifteen lupus patients some of whom have been taking this treatment for several months and their skin shows as dark as a negro's in the photograph The sunbath room has glass walls and the patients in bathing trunks are gradually accustomed to the light, only fifteen or thirty minutes at first The exposures are carefully regulated to avoid sunburn The pigmentation realized with the mercury quartz lamp ranks with that from direct sunlight With several of these lamps the room is transformed into an artificial sunbath hall He gives no casuistic details

124 **Hemoptysis**—Neumann noticed that the reclining position seemed to facilitate hemoptysis in some patients The tendency to bleeding stopped at once when these patients were got up out of bed Morphin given to combat hemoptysis is often directly responsible for aspiration pneumonia to which he attributes the outcome in the majority of fatal parenchymatous hemoptysis cases A typical example is related, the young woman was kept under morphin and made to lie still in bed After a few days of this, fatal pneumonia developed, evidently the result of aspiration He places great reliance on intravenous injections of 10 per cent. saline and on the calcium salts The latter are given preferably in the form of purified calcium chlorid, siccum or fusum, in a daily dosage of 2 or 3 gm (0 04 or 0 05 gm per kilogram of weight) in capsules or in a 10 or 20 per cent solution A teaspoonful of the 20 per cent solution can be taken three times a day in water or in a cup of (cooled) cocoa This calcium medication is kept up for several weeks or months unless there are gastro-intestinal disturbances

The action of the ciliated epithelium is explained to the patient so that he is content to merely hawk and clear his throat when he feels a tickling there, and does not attempt to cough up prematurely sputum from the depths each time The desire to cough can often be suppressed by a sip of milk at room temperature taken through a tube If a narcotic is necessary he gives codein and avoids morphin If the heart action is bad, digitalis may be useful This also promotes coagulation If any signs warn of retention or aspiration pneumonia he gives emetics in heroic doses, for vital danger impends He never witnessed any harm result from vomiting after a hemoptysis

Gazzetta degli Ospedali e delle Cliniche, Milan

Dec 25 1915, XXXVI, No 92, pp 1441 1456

126 Case of Hard Edema Simulating Elephantiasis (*Contributo allo* studio dell'edema duro) E Serra

December 20, No 93, pp 1457 1472

127 Gauze Dipped in Petrolatum Liquefied by Heat for Dressing and Draining Wounds (*La medicatura e il drenaggio alla paraffina*) A L Soresi (New York)

December 30, No 94, pp 1473 1488

128 *Connection between Polymorphous Erythema and *Tuberculosis* (Contributo clinico sulla natura e significato *dell'eritema poli morfo*) B Nicola

128 **Polymorphous Erythema May Be a Sign of Latent Tuberculosis**—Nicola describes seven cases in six of which an idiopathic polymorphous erythema was soon followed by symptoms of incipient tuberculosis or else tuberculous lesions were already installed De Blasi has also published some cases in which persons who had presented polymorphous erythema at some time developed pulmonary tuberculosis a few years later This is not at all common, however, Nicola found no history of anything of the kind in 500 tuberculous patients whose antecedents were investigated At the same time, the experiences related testify that incipient or established tuberculosis is the cause of a certain proportion of cases of polymorphous erythema

Semana Medica, Buenos Aires

Oct 28, 1915 XXII, No 43, pp 503 546

129 *Epithelioma of the Tongue (Electroignicion y epitelioma de lengua) E. Cisneros

130 *Prevalence of Grippal Pneumonia at Buenos Aires. (Sintomatologia rara en el curso de una neumonia) R Cabrera

November 4, No 44, pp 547 574

131 The "Melting Pot" in Argentina and the Argentinian Race (La formacion de una raza argentina) J Ingenieros

129 **Epitheliomas of the Tongue**—Cisneros has made a special study of these growths and he found that always the growth extended down into or started in the floor of the mouth When the neoplasm was destroyed by electrocauterization, following it down into the floor of the mouth, a permanent cure was realized Consequently he declares that epithelioma of the tongue is as readily curable as superficial growths The lingual artery is the connecting link between the epithelioma of the tongue and the floor of the mouth When there is a history of syphilis he gives the epithelioma the local treatment first and then treats the syphilis

130 **Grippal Pneumonia**—Cabrera comments on the prevalence of pneumonia in children at Buenos Aires and the frequency of cerebral symptoms, delirium and paresis In one case a child of 3 had twelve days of fever, diarrhea, cough and great prostration with signs of pneumonia and in the throat the "grippal arch and papules, Ortiz' sign" Brought to the hospital in this stage the child was somnolent, and both arms and legs were as if paralyzed The head sagged on the thorax when the child was raised to a sitting position The tendon reflexes were attenuated but there was no paralysis of the respiratory muscles nor of the velum The twenty-first day after the first symptoms the fever dropped and improvement progressed to complete recovery

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Dec 25, 1915, II, No 26, pp 2715 2778

132 *The Behavior and Functioning of the Spleen in Acute *Infectious* Diseases (Bijdrage tot de kennis van de rol der milt bij acute infecties) A E Sitsen

132 **The Spleen in Acute Affections**—Sitsen is director of the medical school at Soerabaja, in the Dutch East Indies, and hence his study of the spleen in acute infections refers to tropical conditions In 1914 there were ninety-two cases of croupous pneumonia in the prison and the same number in the public hospital The mortality was the same, 43 per cent in each group He relates that the clinical picture of this disease in the East Indies differs widely from the disease as encountered in Europe A close connection was evident between the clinical course and the anatomic findings, and between both these and the reaction on the part of the spleen He discusses further the behavior of the spleen in a few cases of typhoid and of infectious colitis, suppurative processes and pleurisy The data apparently indicate that in the tropics the spleen may be regarded as constantly more or less pathologic to start with

Hospitalstidende, Copenhagen

Dec 29, 1915, LVIII, No 52, pp 1327 1346

133 Acute Appendicitis, 178 Operative Cases. (Statistiske Meddelelser *om akut Appendicit*) *P Bull (Christiania)*

Hygiea, Stockholm

1915, LXXVII, No 23, pp 1401 1488

134 Information for Civilian Physicians in Regard to the Military Medical Service (Några detaljer rörande sakkunskap *och* militar sjukvård) F Klefberg

135 *Abuse of Wood Alcohol and Other Substitutes for Liquor (Något *om bruket* av denaturerad sprit och andra surrogat för sprit drycker) J Billström

135 **Substitutes for Liquor**—This communication from an institution for treating inebriates states that, in the last seventeen years, of the 386 inmates, seventeen were in the habit of using denatured alcohol, eight perfume, and others various substitutes for alcohol, bringing the total to sixty-one in this category The denatured alcohol was taken mixed with Pilsener beer and this mixture seems to be growing in favor as a beverage Billström remarks that it would be better to denature with an emetic rather than with the substances now used In the lower classes these substitutes for liquor are taken usually only after drinking more or less liquor The addicts of a higher social grade resort to them as a rule only during periods of abstention from liquor

Ugeskrift for Læger, Copenhagen

Dec 23, 1915, LXXVII, No 51, pp 1995 2020

136 *Foreign Bodies in the Bronchi, Sixteen Cases (*Om Fremmed* legemer i de dybere Luftveje) A Thornval

Dec 30, No 52 pp 2021 2032

137 Suppuration in Mesenteric Glands, Two Operative Cases, Recovery in One (Om Adenitis glandularum mesenterii) A Piers

136 **Foreign Bodies in the Bronchi**—Some of the sixteen cases reported confirm anew that a foreign body can be drawn into the lower air passages and cause so little disturbance that its presence is not suspected One small child had a sudden attack of suffocation, suggesting that it had "swallowed something the wrong way," but then there was no further trouble of the kind and the suspicion was dropped Two months later the child was brought to the hospital for prolonged "pneumonia," but with final apparent recovery The child seemed to be healthy and active, only very rarely there was an attack of coughing, without expectoration After eighteen months the attacks of coughing became more frequent and fever developed Roentgenoscopy then revealed a foreign body in the left bronchus and it was successfully removed by tracheotomy The brass pencil tip had evidently been in the lower air passages for nearly two years The fact that the attacks of coughing were brought on by exercise or abrupt change of position should have suggested the proper diagnosis long before, rhonchi and weaker respiration over part of the lung would have confirmed it In such cases dangerous complications are liable to develop at any moment especially atelectasis simulating pleurisy with effusion or pneumonia In one of the cases related and in one published by Schiodte the patients were long treated for supposed pulmonary tuberculosis Only two of the sixteen patients were adults Two of the total sixteen succumbed, one to bronchopneumonia and one to a gangrenous process

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PRESENT VIEWS IN RESPECT TO MODES AND PERIODS OF INFECTION IN TUBERCULOSIS *

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In considering the various modes in which infection with the tubercle bacillus can occur, we may, for the purposes of this paper, leave out of discussion all except inhalation and ingestion There is practically no difference of opinion concerning their relative importance They play small part in the epidemiology of the disease, and the total number of cases due to them is insignificant compared to those in which infection takes place through the respiratory and the digestive tracts Both routes of infection are universally recognized, and there remains to be determined now only their relative importance as portals of entry

Tuberculosis is a disease, the lesions of which are found so preeminently in the lung that it is easy to understand how the older physicians considered the respiratory tract the route of invasion The classic work of Arnold gave scientific standing to this idea, since it proved that the lung could be invaded even by particles of inert matter, such as lampblack, introduced by the respiratory tract, and the experiment of Cornet, who exposed guinea-pigs to the dust produced by breaking up dried tuberculous sputum with a broom, resulting in the infection of most of the animals, seemed to settle the question in favor of this method from a practical point of view

The older observations were apparently lost sight of, and did not receive due consideration until after the memorable British Congress on Tuberculosis in 1901, when the attitude of Koch in regard to the danger of bovine tuberculosis and the alleged rarity of primary intestinal tuberculosis brought them to the front once more

RESPIRATORY INFECTION

The work of Arnold and the experiments of Cornet have been mentioned as furnishing the basis for the belief that tuberculous infection took place mainly through the respiratory tract Further evidence seemed to be at hand in the greater number of cases in which the supposedly primary lesion was found in the lung and bronchial lymph nodes as compared with the intestine and mesenteric glands The value of this evidence has been weakened during recent years by the discovery of the fact that, in children particularly, the bronchial lymph nodes are often tuberculous when no change can be found in the lung, and the belief is growing that the bronchial glands and small lymph nodes are first infected, and the lung tissue becomes involved later Schroeder and Cotton have demonstrated that infection of the lung and bronchial glands can result from inoculation into the most distant parts of the body A calf inoculated under the skin at the end of the tail died affected with tuberculosis of the lungs The bronchial mediastinal and mesenteric glands were edematous and contained tubercle bacilli, though not having the histologic changes of tuberculosis

Three hogs inoculated in the same way developed progressive tuberculosis of the lungs, liver and inguinal glands, and in one the gastrohepatic and bronchial glands were involved

It is evident that infection of the lung is not the simple process of inhaling bacilli directly into the alveoli, as was formerly believed, but involves a more complicated mechanism

The fixing of the portal of entry by the so-called oldest lesion is also open to serious question I have produced fatal pulmonary tuberculosis in monkeys by feeding, with very insignificant intestinal lesions All the oldest lesions were located in the lungs and bronchial glands, yet the method of feeding largely precluded the possibility of the tubercle bacilli reaching the lung except through the digestive tract Practically all observers agree that in children there is a marked tendency to rapid and general dissemination of the disease, and many note that it is frequently impossible to determine the oldest lesion As our conclusions have been drawn largely from postmortem observations on children, these facts are significant

Dust and Spray—In regard to the form in which tubercle bacilli are inhaled, all are agreed that dust from dried and pulverized sputum, and mouth spray produced in coughing, talking, sneezing, etc, both play their part The relative danger of the two methods has not been determined, some believing that dust is the chief menace, while others follow Flugge in holding that the mouth spray produces infection more readily The bacilli in the spray are certainly more apt to be alive and virulent Both must be recognized as capable of producing infection, and droplet infection is probably the more dangerous

INFECTION THROUGH THE DIGESTIVE TRACT

The first recorded cases of infection through the digestive tract are those of Klenke, who in 1846 gave the histories of sixteen children who had been fed on cow's milk, and all of whom showed tuberculosis of the intestines, glands, skin or bones

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* Read before the Section on Public Health and Medical Science Second Pan American Scientific Congress Washington, D C Dec 28 1915

Previous to this, however, Carmichael, in 1810, recorded as his observation that he had frequently seen the mesenteric glands strumous without involvement of the external glands, and this led him to believe that in scrofula the mesenteric glands were first involved He referred to the frequency of a disease similar to scrofula seen in pigs fed on sour milk, and called attention to the common occurrence of bowel trouble in children at the time of weaning "too often followed by disease of mesenteric and lymphatic glands"

Casper, in 1882, referred to the extent of tuberculosis ("nodular consumption") among the milch cows of Paris, and said, "It is possible that there is a connection between this phenomenon and the many tuberculous diseases among the children of Paris"

Experimental evidence of tuberculous infection in cattle by feeding was given as early as 1868, by Chauveau, who extended his work with corroborative results in 1872 and 1873, and Villemin in 1869 obtained positive results by feeding in rabbits and guinea-pigs He was the first to employ a tube for the introduction of tuberculous material into the stomach Experiments by scientists of every nation have given positive support to the work of these early observers It is also a well-known and widely observed fact that in the spread of tuberculosis of cattle and swine the digestive tract plays a most important rôle Swine particularly are infected through the digestive tract in the great majority of cases, and the ingestion of milk from tuberculous cattle is universally recognized as one of the chief factors in the spread of the disease among these animals The first examination made by the officers of the federal Meat Inspection Service is based on this fact In 93 3 per cent of cases, tuberculous hogs show infection of the cervical glands

> "As the disease is essentially produced by ingestion, the glands and tissues associated with the digestive tract are the most frequent seats of infection Indeed, the superior cervical glands (in almost all cases the submaxillary gland) are nearly always affected, as at the postmortem examination held by bureau inspectors over a consecutive period on 120,000 tuberculous hog carcasses, 93 3 per cent were found to contain lesions in these glands The large tonsils and the large number of lymph sinuses in the lymph glands probably account for this great frequency"
>
> "From some records relative to the locations of tuberculous lesions in cattle that were made at the same time that the figures pertaining to hogs were collected, it appears that in tuberculous cattle the lesions of tuberculosis were located in the cervical glands in 66⅔ per cent. of the animals, in the bronchial glands in 54 5 per cent, and in the mediastinal glands in 63 6 per cent"

In 1901, in his London address, while discussing the relation of bovine tuberculosis to human health, Koch took the ground that infection through food could be assumed to have taken place with certainty only when the primary tuberculous lesion was located in the intestines He asserted that this was rarely found to be the case, and argued that the danger of infection through food was slight The stand taken by Koch assumed that the tubercle bacillus was unable to gain entrance to the system through the intestinal wall without the production of a lesion at the point of entrance

The question raised by Koch has been thoroughly investigated, and it can be said with certainty that the tubercle bacillus can penetrate the mucous membrane of the upper digestive tract as well as that of the intestine readily and quickly, without producing a tuberculous lesion at the point of entry By Baumgarten, however, it is held that there is always a focus of infection at the point of entrance sooner or later, even though it may be microscopic Against this is the demonstration by von Behring and Roemer of the ready permeability of the intestinal mucosa of young animals by various bacteria — even the large anthrax bacillus In 1,000 swine, infected through food, Ostertag found the glands of the throat, neck and mesentery tuberculous, while the mucous membrane of the intestine was always free from disease Orth, in 1879, and Cornet, in 1880, observed bacilli pass step by step through the fully developed mucous membrane of the uninjured intestine and reach the lymph channels and mesenteric glands, leaving no recognizable trace behind (Furst) Dobroklonski, in 1890, working under Cornil, showed that the tubercle bacillus would quickly penetrate the healthy wall of the intestine in guinea-pigs Desoubry and Porcher, students of Nocard, showed in dogs that during the digestion of fats large numbers of bacteria were carried through the intestinal wall and could be detected in the chyle within a few hours after the meal was given If food free from fat was given, few or even no bacteria could be found Nicolas and Descos, in 1902, found that tubercle bacilli given to dogs in fatty food reached the chyle within three hours During feeding experiments conducted at the laboratory of the State Live Stock Sanitary Board of Pennsylvania, we frequently observed extensive tuberculosis of the lungs and thoracic glands in animals which showed slight or even no involvement of the intestine In 1902-1903, I introduced into the stomachs of a number of dogs tubercle bacilli suspended in an emulsion of melted butter and warm water, using a tube in order to prevent possible infection through the trachea The dogs were killed after three and one-half to four hours, during active digestion, as much chyle as possible was collected, and the mesenteric glands were removed Guinea-pigs were inoculated with this material Tubercle bacilli were demonstrated in abundance in eight of ten experiments The dogs were kept on soft food for some days before the experiments, and were purged with castor oil, in order to rid the intestine of all foreign matter which might injure the mucous membrane Numerous sections of the intestine were examined also, but no injury could be detected

It is possible here only to mention the work of Calmette and his students, as a result of which he concluded that pulmonary tuberculosis acquired at any age may be due to recent intestinal infection

The rapidity with which tubercle bacilli penetrate the intestine and reach the lung through the thoracic duct is remarkable Besanti and Panisset found that when fed to dogs in soup they reached the heart blood within from four to five hours Bartel found that after a single dose they penetrated the uninjured intestine and reached the mesenteric glands during the following digestive period Schlossmann and Engel, by inoculating tubercle bacilli suspended in cream into the stomachs of young guinea-pigs through an incision in the abdominal wall, demonstrated that they reached the lung within six hours Their work has been confirmed by Ravenel and Reichel Rabinowitsch and Oberwarth established nutrition through a gastric fistula in swine, and then resected the esophagus, after which tubercle bacilli were introduced into the stomach Within twenty-four hours they were shown to have penetrated to many organs of the body

INFECTION BY THE BOVINE TUBERCLE BACILLUS

The statement of Koch in 1901 that bovine tuberculosis was not a menace to public health has also led to a vast amount of study which throws light on the portal of entry of the tubercle bacillus It is conceded by every one that bovine tuberculosis is found almost exclusively in children under the age of 16 years, and that the susceptibility to this type of infection is greater during the first five years of life than it is afterward It is perfectly evident that the only exposure that children of this age can have to the bovine germ is through the food which they eat, and infection is, therefore, invariably through the digestive tract

The results of the English royal commission, the German imperial commission, and numerous private workers have been frequently quoted, and I give in Table 1 a summary of instances collected by Dr Park which indicates fairly the amount of infection due to the bovine tubercle bacillus, especially in fatal cases

Many nonfatal cases of tuberculosis are also caused by the bovine germ These are found almost exclusively in children, and the infection is through the digestive tract

Fraser, in sixty-seven cases of bone and joint tuberculosis in children under 12 years of age, found the bovine germ forty-one times, the human twenty-six times, and both three times

TABLE 1 —INFECTION DUE TO THE BOVINE TUBERCLE BACILLUS IN INSTANCES COLLECTED BY PARK

Persons	Age	Cases Total Number	 Human	 Bovine
Adults	16 years and over	955	940	15
Children	from 5 to 16 years	177	131	46
Children	from 0 to 5 years	368	292	76

Mitchell examined seventy-two children under 12 years of age with cervical adenitis, and found the bovine germ in sixty-five, the human in only seven

It should be remembered that the human tubercle bacillus is capable also of producing infection through the digestive tract, and the mistake must not be made of considering only those cases in which the bovine germ is found as due to ingestion

INFECTION THROUGH THE TONSILS

The frequency of infection through the tonsils has been recently called in question by von Pirquet, who quotes Albrechts and Ghon to support his view The former in 1,060 cases found only three instances of primary tonsillar infection, and the latter in 189 cases found only one It is hard to reconcile these findings with those of others, or with experimental work

Wood has collected from the literature 1,671 instances, eighty-eight (5 2 per cent) of which showed primary tuberculosis These examinations were made by various methods, and probably fall short of the truth Lartigau and Goodale have shown that systematic inoculation of animals gives a higher percentage of tuberculosis In seventy-five cases, Lartigau found twelve (or 16 per cent) tuberculous Dieulafoy, by the inoculation of guinea-pigs, found tuberculosis of the tonsils in fifteen of ninety-six cases This work has been criticized on the ground that no histologic examinations were made, as Dieulafoy was not careful to exclude the crypts, which may lodge tubercle bacilli Latham, however, who avoided these sources of error, in twenty-five consecutive necropsies on children from 3 months to 13 years of age, found seven which were tuberculous—results practically identical with those of Dieulafoy Confirmatory reports have been made by a large number of observers, many of which are included in the figures quoted from Wood The susceptibility of the tonsils to tuberculous infection is shown by the examination of persons dead of phthisis

Experimentally, the tonsils are readily infected, by direct application, as well as by feeding tuberculous material In a series of experiments which I carried out at the laboratory of the State Live Stock Sanitary Board of Pennsylvania, swine fed with tubercle bacilli from man and from cattle developed generalized tuberculosis, with marked involvement of the tonsils, apparently primary, with necrosis and ulceration

The experiments on these lines are too numerous to review here Practically all experimental observers have noted the susceptibility of the tonsils to tuberculous infection Wood of Philadelphia has carried out a most instructive series of experiments on swine He found that the application of tubercle bacilli to the back of the mouth rapidly produced primary tuberculosis of the tonsils, soon followed by involvement of the submaxillary and cervical glands and extensive disease of the lungs The mesenteric and bronchial glands were always diseased in about an equal degree

I have referred above to experiments carried out on monkeys by feeding, in which the lungs showed extensive and destructive tuberculosis In these animals, while no lesion of the tonsil could be found, caseous lymphatic glands were found in the neck in the region draining from the throat, and there could be no doubt that a part of the infection at least occurred by penetration of the mucous membrane in this region

Grober believes that infection through the tonsil is the most frequent origin of apical tuberculosis His experiments have demonstrated that from the cervical glands there is a direct route to the pleurae and lungs, and that this leads especially to that portion of the lung most frequently the primary seat of tuberculosis —the apex

The evidence that the tonsils are frequently the portal of entry for the tubercle bacillus appears to me very conclusive, and it seems equally certain that food is the bearer of the infection in a large proportion of cases

PERIOD OF INFECTION IN TUBERCULOSIS

Few problems offer more inherent difficulties in their solution than the determination of the age at which tuberculous infection occurs It is easy to construct tables showing the age at which the disease becomes manifest clinically, but, except in the early years of life, these give little clue to the exact time of infection

There is no doubt of the existence of a widespread opinion that infection takes place chiefly in infancy and childhood, and this opinion appears to be growing It seems to have a legitimate basis, even if not wholly true In 1900, Naegeli showed by necropsies in Zurich that by the age of 30, 99 per cent of persons showed tuberculous lesions or scars, results which have been in a measure confirmed in other cities, but which cannot be accepted as correct for the general population

The use of tuberculin by the method of von Pirquet, or some of its modifications, is even more directly responsible for the belief in early infection Von Pirquet himself obtained positive reactions among children of the poorer class in Vienna in a surprising number of cases—70 per cent , if clinical cases of tuberculosis are excluded, and 80 per cent if included, as shown by Table 2

More surprising even are the results of Hamburger and Monti, also on children of the poorer class in Vienna (Table 3)

Based on such findings, the belief is widely held that over 90 per cent of children are infected with tuberculosis by the 14th year, and statements have been made that tuberculosis in adult life is only the recrudescence of infection acquired in early life

A further study of reports from different parts of the world reveals marked variations in the percentage of positive reactions, but all show that tuberculous infection in childhood is extremely common, as seen by Table 4

Postmortem reports by von Pirquet, Muller and others show that the positive reactions fall short of showing the full number of those infected

Turning to recent work in the United States, we find a somewhat different picture Veeder and Johnston tested 1,321 hospital children in St Louis, and obtained a maximum of 48 per cent positive reactions at the age period from 10 to 14, including cases of clinical tuberculosis, and 38 per cent exclusive of these

Cattermole of Colorado, in a series of sixty-six cases from 1 to 14 years of age, found twenty-five, or 38 per cent , of positive reactions Taking the age period from 10 to 14, his positive reactions reached 63 per cent

TABLE 2—POSITIVE REACTIONS IN CHILDREN OBTAINED BY VON PIRQUET

Age (Yrs)	Including Cases of Tuberculosis			Excluding Cases of Tuberculosis		
		Positive Reactions			Positive Reactions	
	Total No	Number	Per Cent	Total No	Number	Per Cent
Under 1	410	21	5	388	0	0
From 1 to 2	116	24	20	89	0	0
From 2 to 4	208	74	35	162	22	13
From 4 to 7	264	127	48	189	53	30
From 7 to 10	216	138	64	154	74	48
From 10 to 14	193	155	80	147	105	70

TABLE 3—POSITIVE REACTIONS IN CHILDREN OBTAINED BY HAMBURGER AND MONTI

Age (Years)	No Children	Positive Reactions	
		Number	Per Cent
Under 1	23	0	0
From 1 to 2	46	4	9
From 2 to 3	56	11	20
From 3 to 4	75	24	32
From 4 to 5	50	26	52
From 5 to 6	63	32	51
From 6 to 7	46	28	61
From 7 to 8	30	22	73
From 8 to 9	35	25	71
From 9 to 10	26	22	85
From 10 to 11	29	27	93
From 11 to 12	19	18	95
From 12 to 13	17	16	94
From 13 to 14	17	16	94

TABLE 4—PERCENTAGE OF POSITIVE REACTIONS IN CHILDHOOD OBTAINED BY VARIOUS OBSERVERS

Name Place	Number Tested	Age	Positive Per Cent
Overland, Bergen	843	From 12 to 14	50
Amenta, Palermo	800	From 8 to 12	83
Müller, Vienna	949	From 10 to 14	54
Calmette, Grysez	1,226	From 5 to 15	81 4
Letulle, Lille		From 12 to 16	60

Cattermole quotes Manning of Seattle as having obtained 58 1 per cent. of positive reactions at the age period from 10 to 15, in a series of 228 children

He also quotes Fishberg of New York, who, among 692 children living with tuberculous parents in the tenements, obtained 67 25 of positive reactions, while among 588 of the same class, but living with nontuberculous parents, 52 72 per cent gave positive reactions

Smith subjected 1,225 Indian children in New Mexico of school age to the test, and obtained 760 positive reactions, a percentage of 64 40

TABLE 5—TOTAL REACTIONS, INCLUDING CASES OF CLINICAL TUBERCULOSIS

Age (Years)	No Children Tested	Positive Reactions	
		Number	Per Cent.
Under 1	224	25	11
From 1 to 2	137	34	24
From 2 to 4	188	57	30
From 4 to 6	206	68	33
From 6 to 8	182	74	40
From 8 to 10	157	69	44
From 10 to 12	115	45	40
From 12 to 14	112	54	48
	1,321	426	

TABLE 6—REACTIONS IN CHILDREN WITHOUT CLINICAL MANIFESTATIONS OF TUBERCULOSIS

Age (Years)	No Children Tested	Positive Reactions	
		Number	Per Cent.
Under 1	202	3	1 5
From 1 to 2	109	6	5 5
From 2 to 4	163	32	19
From 4 to 6	172	40	23
From 6 to 8	152	44	29
From 8 to 10	126	38	30
From 10 to 12	107	37	34
From 12 to 14	94	36	38
	1,125	236	

These findings are corroborated by postmortem examinations done on children who have died from various diseases

The studies of Harbitz throw much light on this question I give his results, as well as those of others, most of which are quoted from his monograph

Harbitz, in 275 necropsies on children under 15 years of age, found 117 (42 5 per cent) of tuberculosis

Babes, in 902 necropsies on children under 15, found tuberculosis in 288 (31 9 per cent.)

In 1887, in ninety-three necropsies, tuberculosis of the bronchial and mesenteric glands was found sixty-five times In only thirteen was death caused by tuberculosis

Geill, in 902 necropsies on children under 15, found tuberculosis in 288 (31 9 per cent.) The maximum was reached at the period from 6 to 9, 46 9 per cent

Müller, in 500 necropsies on children, found 150 (30 per cent) cases in which death was due to tuberculosis, and fifty-nine (11 8 per cent.) of latent tuberculosis

Hecker, in 700 necropsies on children, found active or latent tuberculosis in 147 (21 per cent)

Monrad, in 654 necropsies on children, found tuberculosis in 157 (24 per cent.)

At the pathologic institute of Kiel, in 2,572 necropsies on children under 15, tuberculosis was found in 16 7 per cent

Boltz, in 2,601 necropsies on children under 15, found tuberculosis in 428 (16 1 per cent) Exclusive of those under 1 year of age, we have 1,171 necropsies with tuberculosis in 364 (31 per cent)

Heller found latent tuberculosis in 140 (19 6 per cent) among 714 children dead of diphtheria

Councilman, Mallory and Pearce, in 220 necropsies on children dead of diphtheria, found latent tuberculosis in thirty-five (16 per cent.)

Hand, in 332 necropsies on children, found tuberculosis in 115 (34 6 per cent)

Still, in 769 necropsies on children under 12, found tuberculosis in 269 (35 per cent.) In forty-three it was latent, and in 117 (43 4 per cent.) before the second year

Many other similar reports could be given, but these have been selected as covering a large part of the world, and representing fairly the occurrence of tuberculosis as found postmortem in children

Wallgren of Upsala has made some valuable clinical observations bearing on this subject He compared the histories of 100 consumptives and 100 healthy persons as to their exposure during childhood He took only those cases in which intimate contact during childhood with coughing consumptives could be affirmed with reasonable certainty "Of the 100 tuberculous patients, fifty-one gave evidence of childhood contact with tuberculous associates, whereas of the 100 normal individuals, such contact was found in but thirteen"

It is impossible to escape the conviction that childhood is preeminently the time of life when the tubercle bacillus gains a foothold in the body

ADULT INFECTION

The difficulty, especially marked in adult life, of connecting the clinical manifestations of tuberculosis with the date of infection, has already been mentioned, but fairly accurate information on adult infection can be obtained by the careful study of groups of individuals of good family history especially exposed to infection for considerable periods, such as physicians and attendants at hospitals and sanatoriums for tuberculosis, and those who marry consumptives A number of collective investigations are quoted by Cornet and other writers Many of these, owing to incomplete data and other defects, are of little or no value From the material at hand I have tried to select those which seem to throw some light on the question

Saugman states that of 174 sanatorium physicians, whose average term of service was three years, and whose subsequent history was followed for three and one-half years, only two became tuberculous Among sixty-four laryngologists from eight different clinics, none contracted tuberculosis

Williams has, in two papers, given most interesting facts concerning infection of physicians and attendants at Brompton Hospital, founded before the discovery of the tubercle bacillus, and before the contagiousness of tuberculosis was recognized His first paper gave the statistics of the hospital staff from its foundation in 1846 to 1882, thirty-six years Among four resident medical officers, one of whom held office twenty-five years, no case of consumption has developed Among 150 house physicians, none of whom held office for less than six months, and many much longer, only eight cases of consumption occurred

The second paper gives the results from 1882 to 1909 It includes resident and assistant resident medical officers, house physicians, resident and nonresident porters, pathologic assistants and dispensers, in all 369 persons, of whom twelve, or 3.2 per cent, developed phthisis later, two of them through inoculation wounds

The comments of Goring on this report are most interesting He compares these results with those obtained by himself in a study of 3,090 individuals of nontuberculous parentage, assuming that a person coming of tainted stock would not be likely to take service in a consumptive hospital Among his 3,090 persons, seventy-nine, or 2 6 per cent developed tuberculosis Thus two groups, one exposed to special risks and one not, showed an amount of infection varying only 0 6 per cent. If the two hospital cases, associated with inoculation wounds, are left out of consideration, we have practically the same percentage of infection, 2 6 and 2 7 per cent

Since the foundation of the Adirondack Cottage Sanitarium, more than twenty-eight years ago, there has been no case of infection among the employees, including waitresses, chambermaids and laundresses

Infection through marriage may give some clue to the susceptibility of adults Cornet says, "The number of cases of marriage infection, often of classical simplicity, runs up into the hundreds" His own study of 594 couples showed that in 23 per cent both partners were tuberculous He admits that the findings do not necessarily imply an etiologic relation between the cases Cornet believes the actual cases run higher than the figures given indicate Other observers place marital infection at from 3 to 12 per cent Recent studies made according to modern statistical methods tend to throw doubt on the earlier work[1]

The late E G Pope's study of this question failed to show definite proof of infection between married persons His work has been reviewed by Karl Pearson, who says

> I may conclude in the slightly modified words of Mr Pope It would seem probable then (1) that there is some sensible but slight infection between married couples, (2) that this is largely obscured or forestalled by the fact of infection from outside sources, (3) that the liability to the infection depends on the presence of the necessary diathesis, (4) that assortative mating probably accounts for at least two thirds and infective action for not more than one third of the whole correlation observed in these cases But the demonstration of this result depends on the acceptance of the inherited diathesis to be effective, and the existence of assortative mating of equal intensity in the case of want of mental balance must prevent dogmatism In all future collection of statistics with regard both to marital infection and parental infection, it is most important that the age of husband and wife at marriage and the age at onset and death in both should be recorded. Age at onset and death of the parent, age of parent at birth of child and age at onset and death of child should also be recorded It is only by such complete records that we shall ultimately be able to accurately apportion the action of infection, assortative mating and inheritance
>
> For real light on the problem of assortative mating of the tuberculous, we must wait till we have definite knowledge in each case of the family history of both husband and wife If we find (1) that the marriage of two ultimately tuberculous persons took place before either were suspected of the disease and (2) that there is in such cases a larger percentage of family histories of tuberculosis than in the case of nonmarried tuberculous individuals, we should have definite evidence of the assortative mating which seems probable If, on the other hand, the percentage were smaller, we should have definite evidence for the infection theory

The difficulty of determining the date of infection by the appearance of clinical symptoms has already been mentioned As our ideas have been in the past largely drawn from clinical data, it is evident that there is need of some revision How such data may mislead is evidenced by the statement of Goring[2]

> The mean age of onset for both sexes taken together is about 27—the standard deviation is about nine years It follows from this that the ages between 14 and 45 may be looked on roughly as a danger zone for tuberculous infection The modal value of age of onset is about 23, and this is the age when danger of infection is most intense, the danger diminishing fairly rapidly to the age of 14, and more gradually to the age of 45

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[1] Prisons have been notorious for the many cases of consumption which developed among prisoners and these figures have been used as demonstrating infection I have purposely left these out of consideration in this paper because of the class of people affected. It is almost certain that the majority of these cases are simply instances of recrudescence of an infection which took place in early life There is at least so much doubt concerning them that I have not considered the figures justifiable for use in this discussion

[2] Goring Studies in National Deterioration V

It seems certain that the early years of life are those in which tuberculous infection takes place in the great majority of cases, and primary infection of adults is much less frequent than formerly believed Clinical histories cannot be relied on to determine the period of infection It seems equally certain that infection of adults does occur, and that no age is exempt

CONCLUSIONS

1 The evidence at hand indicates that in the majority of cases the respiratory tract is the route of infection in tuberculosis

2 The alimentary tract is a frequent portal of entry for the tubercle bacillus

3 The tubercle bacillus is able to pass through the intact mucous membrane of the alimentary tract without producing a lesion at the point of entrance This takes place most readily during the digestion of fats

4 The bacilli pass with the chyle through the lacteals and thoracic duct into the blood, which conveys them to the lungs, where they are retained largely by the filtering action of the tissues

5 Infection through the alimentary tract is especially frequent in children

6 Infancy and childhood are preeminently the periods of life when the individual is susceptible to tuberculous infection, and the majority of cases of infection occur during these early years

7 Any campaign against tuberculosis which leaves out of consideration the protection of children against infection will fail of success

8 Tuberculous infection in adult life occurs, but not so frequently or readily as generally believed

9 Tuberculous infection may occur at any age

TRANSFUSION OF BLOOD WITH SPECIAL REFERENCE TO THE USE OF ANTICOAGULANTS*

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We previously reported[1] a method of transfusing blood by means of specially constructed pipets and cannulas designed for use with either a lining of hardened paraffin or a preliminary internal coating of an anticoagulant solution such as leech extract or herudin[2] During the past eighteen months we have experimented with various anticoagulants other than paraffin and herudin, with a view to determining the best anticoagulative agents for purposes of transfusion We desire here to report the results of these experimental transfusions and to summarize the theoretical and practical advantages of the anticoagulants which we have studied, and in order to make more evident at the outset the practical bearing of this study, we propose, first, to discuss briefly the present status of blood transfusion as a rational therapeutic procedure, and to call attention to certain aspects of this problem which are not usually taken into consideration It is not our intention by this discussion to disparage the valuable and often brilliant results which have been and are being constantly achieved by blood transfusion, nor to argue for any special restriction of its field of usefulness, but we do wish to point out the need for a more exact knowledge of the biologic processes which are involved in transfusion of blood (or which may be involved under special conditions) in order that the certainty of its usefulness may be increased and that the liability to any untoward results may be minimized beyond what is realized at the present time

In the constantly enlarging field in which transfusion of the blood is being employed, the questions which arise concerning the indications and contra-indications for this operation, the amount of new blood to be supplied, and the advisability of removing some of the patient's own blood at the time of transfusion, are all matters closely concerned with the probable benefit or futility of the operation For instance, in the emergency of acute hemorrhage occurring in an otherwise healthy subject, or following the artificial removal of acutely poisoned blood, as in the treatment of gas poisoning, we believe that the problem is a comparatively simple one and that the established tests for hemolysis and agglutination between prospective donor and recipient are probably adequate, if indeed the urgency of the conditions may not make it imperative to proceed without taking time for even these tests But the problem is far more complex when it is a question of the benefit to be derived from the transfusion of a so-called "normal" blood into the circulation of a patient suffering from one or more of the various pathologic conditions for which transfusion has been recommended, and we believe that this question could be more satisfactorily answered if laboratory methods were available for the detection of other possible grounds of incompatibility than those which are covered by the tests which are now in use

Among the recent contributions to the literature of transfusion we can find only one reference[3] to accidents which appear definitely to suggest inadequacy of the present tests for blood compatibility, although there are numerous citations of unexplained chills and febrile reactions

Percy[4], in a series of fifty-four transfusions, met with toxic reactions in three cases in which the hemolysis and agglutination tests were perfectly negative, and two of these cases resulted fatally

Ottenberg and Kaliski[4] estimated that there are toxic reactions not referable to hemolysis or agglutination, in 10 per cent of all cases of transfusion, which estimate appears to be based on their own series of 128 cases

Ottenberg and Libman,[5] in their series of 212 transfusions on 189 cases collected from hospital and private sources and performed by a number of different surgeons, have contributed a valuable classified report These authors, in summarizing the untoward results due to transfusion, assign the most unfavorable reactions of their series, including five fatalities, to "incompatible blood" (meaning, apparently, hemolysis or agglutination only) or to hypertransfusion But they also state that a "more or less febrile reaction" occurred in about 10 per cent of all cases and that skin eruptions, usually urticarial, occasionally petechial, appeared in another 10 per cent. In referring to the hemolytic and agglutinative reactions as being an insufficient guide to the value of a given donor's blood for the purpose of stimulating a remission of the disease in pernicious anemia, Ottenberg and Libman make the interesting observation that "there are probably other not yet recognized differences between the bloods of donors"

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[1] Satterlee and Hooker Surg, Gynec. and Obst., 1914, xix, 235

[2] Satterlee, H S, and Hooker, R S The Use of Herudin in the Transfusion of Blood, The Journal A M A, June 6, 1914, p 1781

[3] Percy Surg, Gynec and Obst, 1915, xxi, 360

[4] *Ottenberg, Reuben* and Kaliski, David J Accidents in Transfusion, The Journal A M A, Dec. 13, *1913*, p *2138*

[5] *Ottenberg* and Libman Am. Jour Med Sc., 1915, xl, 36

Lindeman[6] reports 4 chills and 14 febrile reactions in 46 transfusions with related donors, and 22 chills and 32 febrile reactions in 62 transfusions with unrelated donors

Lewisohn[7] reports 5 febrile reactions and 3 chills in 22 transfusions

Two cases of toxic reactions in which the hemolysis and agglutination tests were favorable have been reported to us by Dr Robert A. Cooke of New York in a series of twelve transfusions

Without going further into statistics it will be enough to say that those who have had experience with the transfusion of blood in varying pathologic conditions and by various methods have observed that certain toxic symptoms varying all the way from a slight chill and rise of temperature to marked anaphylactoid phenomena and even death have occasionally resulted as an immediate sequel to transfusion and where the usual serologic tests for hemolysis and agglutination have been entirely favorable

An extended discussion of the available hypotheses by which to explain such phenomena would occupy too much space here, but we believe that certain grounds of explanation are more strongly suggestive than others and are therefore worthy of special attention Recent researches on the blood, and especially on the action of serum ferments, have assumed a general significance as affecting many questions of immunity, and are most particularly pertinent to the problem which here concerns us We will therefore consider three hypotheses, any or all of which may be applicable

1 *It is possible that the trypsin-antitrypsin balance in the circulating blood of the recipient may be so disturbed by the commingling with the donor's blood as to result in the immediate formation of serotoxin from cleavage of serum protein*

For instance, Jobling and Petersen have shown[8] that homologous serum may be toxic for animals under conditions which remove the antiferment and permit the serum protease to act, that[9] serotoxin (anaphylotoxin) formation is coincident with the adsorption of the serum antiferment and[10] that an increase of antiferment diminishes susceptibility to trypsin shock These investigators have further demonstrated[11] that acute anaphylactic shock is accompanied by the intravenous mobilization of a large amount of nonspecific protease, a decrease in antiferment, an increase in noncoagulable nitrogen of the serum and an increase in amino-acids, which they attribute to the cleavage of serum proteins through the peptone (toxic) stage by a nonspecific protease. They conclude that the specific elements of this reaction consist in the rapid mobilization of the protease and in colloidal serum changes which bring about a change in antiferment titer, and that these changes are probably due mainly to an adsorption or lessening of the dispersion of the unsaturated lipoids on which the antiferment property depends

2 *It is possible that the action of protective colloids in the body cells of the recipient may be so disturbed that these cells are thereby exposed to a reaction of antigen and antibody present in the circulation of the recipient but harmless to the protected cell*

In support of such an explanation, the work of Zinsser and Young[12] on the possible importance of colloidal protection in certain phases of the precipitin reaction, has a distinct bearing

If further investigation and better knowledge should prove the validity of these assumptions, it is most probable that laboratory tests can be evolved which will show in advance the liability to harmful results from such causes Meanwhile it would be well to recognize that delicate physicochemical balances may be disturbed and toxic biologic reactions may take place as a result of transfusing blood under certain conditions, and that the usual tests for hemolysis and agglutination, although of primary importance, do not afford the complete assurance of freedom from unfavorable reaction which is commonly believed

The increasing attention which is being given in the current medical literature to simplified methods of transfusion has tended to popularize the idea that almost any technic of operations may be employed which will serve to transfer blood under aseptic precautions and in a fluid state from the circulation of a donor to that of the recipient As opposed to this trend of opinion, we believe that the removal of so complex a tissue as the circulating blood and its exposure to foreign physical influences during transfer to another human system should be regarded as at least as delicate an operation as the transplantation of any other living tissue, and should be given the same degree of consideration for favorable biologic conditions as any other surgical transplant These conditions are not satisfied by providing only for the transfer of the blood in a germ-free and fluid state, they should also preclude the possibility of other changes tending to lessen its functional value as a transplant, and most particularly should the conditions preclude the possibility of harmful disturbances in the recipient's circulation induced by such changes This brings us to another possible causation of toxic reaction which is not concerned with incompatibility between two bloods and which therefore is not to be anticipated by preliminary tests This is

3 *The possibility of a toxic disturbance in the circulation of the recipient by the introduction of blood which, though perfectly fluid, may nevertheless be undergoing incipient coagulative changes due to the physical influences to which it is subjected in process of transfer*

Doerr[13] observes that substances which influence coagulation also induce anaphylactic manifestations, and he states that coagulative changes may produce such toxic reactions as evidenced by work carried out in his laboratory by Moldovan Although Doerr specifically states that these effects may result from the injection of undefibrinated homologous blood, the only protocols which we can find of such experiments are those reported by Moldovan[14] demonstrating the fatal effects of the intravenous injection of recently defibrinated homologous blood In explaining the anaphylactoid phenomena so produced, Doerr says that there is a reaction between an antigen and antibody, this being his conception of the incipient changes of coagulation according to the theory of Nolf, which results in an adsorptive action on the colloids of the blood, and that this latter disturbance —an essentially physical process—is responsible for the anaphylactic symptoms

The mechanism of toxic action as suggested by this theory is similar to the two preceding hypotheses which we have introduced, in that all are concerned with adsorptive phenomena affecting the colloidal substances

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6. Lindeman Edward Blood Transfusion THE JOURNAL A M A. March 28 1914 p 993
7 Lewisohn Surg Gynec. and Obst 1915 xxi 37
8. Jobling and Petersen Jour Exper Med 1914 xix 480
9 Jobling and Petersen Jour Exper Med, 1914 xx 38.
10 Jobling and Petersen Jour Exper Med. 1914 xx, 468
11 Jobling and Petersen Jour Exper Med 1915 xxii 401
12 Zinsser and Young Jour Exper Med 1913 xvii 396
13 Doerr Wien klin Wchnschr 1912 xxv 339
14 Moldovan Deutsch med Wchnschr, 1910 xxxvi 2422

of the blood or of the endothelial cells, and resulting in exposure to chemical change or physical shock. But the special significance of this explanation of toxic action is in connection with the physical influences to which the blood is exposed by the method of transfusion. Defibrination, either by agitation with glass beads or by "whipping," is, of course, an extreme degree of physical violence, but the argument of toxic effect from incipient coagulative factors applies, *pari passu*, with the lesser forms of physical violence which are incident in varying degree to any method of transfusion which is not a direct anastomosis. For instance, Minot[15] has conducted some experiments which demonstrate that blood allowed to remain in brief contact with the glass barrel of a syringe before being mixed with oxalate solution almost always clots when chloroform is added, whereas blood allowed to run from an artery through a paraffined cannula directly into oxalate solution does not clot on the addition of chloroform. Minot's explanation of this is that chloroform renders inactive the antithrombin, thus allowing any free thrombin present to clot the fibrinogen, so that in an oxalated blood the presence of free thrombin indicates that this thrombin was formed in the blood before the blood met with the oxalate influence. The effect of the glass syringe as causing this incipient thrombin formation is, of course, evidenced by his experiments.

The adhesive forces of capillary action, so-called, or, more definitely, the effect of surface tension forces, which act in and about any zone of contact with moistenable foreign surfaces, must be to set free thromboplastic substances in the blood by abrasion and disintegration of platelets. Other more obvious physical violence, such as forcing through small artificial channels, pressure from piston syringes, etc., would naturally increase this effect.

Anticoagulants.—The rational and most desirable function of an anticoagulant is therefore, in our conception of the premises, to restrain *incipient* coagulative changes at the zones of foreign contact, where such changes are most liable to occur. The use of an anticoagulant to render the blood incoagulable in mass, as with the calcium-converting agents, merely as an expedient for handling the blood in a fluid state, does not seem to us justifiable, not only because this involves mixing with the injected blood a much larger quantity of the anticoagulant than is necessary, but also because, by calcium inactivation, only the end-result of the clotting process is prevented. What assurance is there, for instance, that blood rendered incoagulable by citrate, but which has been subjected to physical contact with glass and metal surfaces, does not contain free thrombin, as evidenced by Minot's investigation, or a considerable amount of thromboplastin derived from contact with tissue juices and from the disintegration of platelets? In this connection it should be said that the preserving influence on the platelet cell membrane which is ascribed to sodium citrate can have no effect on the platelets which have already been disintegrated by passage through foreign channels before meeting the citrate influence.

Paraffin.—The natural advantage of the paraffin method for the transfusion of blood is the effectiveness of hardened paraffin as an anticoagulant without admixture of any foreign substance to the transfused blood. Objection to paraffin has nevertheless been made on the ground that special care is necessary to insure a perfect coating of the transfusion pipets or cylinders. It cannot be denied that special care in the matter of coating is essential to success, but the process is not a difficult one, and the mere trouble of coating in advance is offset by the convenience of having the pipets always ready for immediate use without further preparation.

Herudin.—The advantages of leech extract as an anticoagulant for purposes of transfusion may be briefly summarized. The derivation of herudin, the product of specialized glandular activity of the leech, indicates its biologic adaptation to the single purpose which it is known to serve in nature, namely, to prevent coagulation and thereby to facilitate digestion of blood in the stomach of the leech. From a physiologic standpoint it should be, and until recently has been regarded as, the ideal anticoagulant for animal experimentation. It acts not only as a preventive of platelet disintegration,[16] but it appears also to exert a neutralizing or binding action on the positive factors of coagulation (thromboplastin, prothrombin)[17] when these have been rendered active as a result of platelet disintegration.[18] Furthermore, it does not, as far as we know, disturb the protective lipoids of the tissue cells, as has lately been suggested[19] to be the action of the calcium precipitants and other calcium-converting agents.

As against the advantages which have just been enumerated, a very serious practical objection to leech extract has arisen in the uncertainty of procuring a reliable preparation of this substance. Quite recently Turner, Marshall and Lamson[20] discovered that a certain lot of the commercial preparation of "Hirudin" manufactured by Sachse & Co. of Leipzig, purchased by them in the early part of 1915 for use in their experiments with plasmaphaeresis, contained some very poisonous substance. Marshall,[21] in a special investigation of this subject, reviews the findings of other workers with herudin and reports experiments showing the action of aqueous extract of leech heads, as prepared by Abel, Rowntree and Turner[22] in comparison with similar experiments showing the action of the commercial preparation which contained the toxic principle previously mentioned. Marshall found that 20 to 25 mg. of this toxic preparation per kilo of body weight proved fatal for dogs, and ascribes its toxicity not to anything obtained from leech heads, but to some accidental product of putrefaction resembling sepsin. He confirms the findings of Abel, Rowntree and Turner,[22] that the aqueous leech extract, as obtained by their method, is nontoxic in quantities which render the circulating blood incoagulable. While referring to toxic reactions from the use of herudin it is important to call attention to the reactions noted by some observers who have employed much larger quantities of this substance for transfusion than we have advised. Lewisohn,[7] in attempting to employ herudin for his method of transfusion, experimented with the

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[15] Minot: Am. Jour. Physiol., 1915, xxxix, 137.

[16] Bürker: Arch. f. d. ges. Physiol., 1904, cii, 92; Zentralbl. f. Physiol., 1907, xxi, 653. Deetjen: Ztschr. f. physiol. Chem. (Hoppe Seyler's), 1909, lxiii, 1.

[17] Mellanby: Jour. Physiol., 1909, xxxviii, 491.

[18] Morawitz: Deutsch. Arch. f. klin. Med., 1904, lxxix, 215. Bayne Jones: Am. Jour. Physiol., 1912, xxx, 74.

[19] Overton: Arch. f. d. ges. Physiol., 1904, cv, 176. Boehm: Arch. f. exper. Path. u. Pharmakol., 1914, lxxv, 230. Clark: Jour. Physiol., 1913, xlvii, 66. Clowes: Proc. Soc. Exper. Biol. and Med., 1913, xi, 1. Clowes: Ibid., p. 4. Clowes and West: Ibid., p. 6. Salant and Hecht: Am. Jour. Physiol., 1915, xxxvi, 126.

[20] Turner, Marshall and Lamson: Jour. Pharm. and Exper. Therap., 1915, vii, 145.

[21] Marshall: Jour. Pharm. and Exper. Therap., 1915, vii, 157.

[22] Abel, Rowntree and Turner: Jour. Pharm. and Exper. Therap., 1914, v, 257.

TABLE 1.—PRECIPITATION REACTIONS WITH CALCIUM CHLORID

Substances in Aqueous Sol.	Reaction to Litmus (L) and Phenolphth (P)	Addition of 1% CaCl₂ Sol in Small Amt	Addition of 1% CaCl₂ Sol in Excess	CaCl₂ Excess + Dil HCl to Acid Reaction	Excess of Aq Sol of Substance to Already Formed Ppt
Sodium citrate	Faintly alk L Neg P	No ppt	No ppt	No ppt	
Magnesium sulphate	Neg L. Neg P	No ppt	No ppt	No ppt	
Sodium tartrate	Faintly acid L. Neg P	No ppt	Ppt. forms slowly on standing	Ppt. remains	Ppt. remains
Sodium metaphosphate	Faintly acid L Neg P	No ppt	Ppt	Ppt remains	Ppt dissolves
Dipotassium phosphate.	Neg L Neg P	Ppt	Ppt	Ppt remains	Ppt remains
Sodium fluorid	Alk. L Alk P	Ppt	Ppt	Ppt remains	Ppt remains
Sodium oxalate	Alk L Alk P	Ppt	Ppt	Ppt remains	Ppt remains

TABLE 2.—EXPERIMENTAL TRANSFUSIONS WITH SODIUM CITRATE

	Amount of Solution Used c c	Amount of Blood c c	Amount of Anticoag to 100 c c Blood mg	Clotting Time in First Tube Min	Clotting Time in Second Tube Min	Clotting Time of Residual Blood in Pipet, Min
Sodium citrate 10% sol. (1 40 m) (Transfusion 1 Dog 1)	3	215	140	38	45	No sign of coagulation at 67⅓
Sodium citrate 10% NaCl 0.8% equal parts (Transfusion 2 Dog 1)	1.8	215	42	10½	11⅓	No sign of coagulation at 50⅓
Sodium citrate 10% NaCl 0.8% equal parts (Transfusion 7 Dog 2)	1	215	23	15⅚ 36½	10⅙ 27½	9⅚ 16½
Sodium citrate 6 46% sol. (0 9 m) (Transfusion 9 Dog 3)	1	215	30	11⅓ 11⅚	16⅔ 19	16½ 32⅔
Herudin 10 mg in NaCl 0 9% sol (4.5 c c) (Transfusion 10 * Dog 3)	1 5	215	1 5	16⅚ 23⅙	17⅔ 23½	31⅔ † 90
Sodium citrate 10% sol. (1 40 m) (Transfusion 11 Dog 3)	1	215	40	12⅔ 18½	12⅔ 18⅓	Trace of fibrin at 89 still fluid at 24 hours ‡
Sodium citrate 10% sol. (1 40 m) (Transfusion 15 Dog 4)	1	215	46	12 17	17⅔ 23⅔	No sign of coagulation at 24 hours
Sodium citrate 10% sol (1 40 m) (Transfusion 16 Dog 4)	1	215	46	21 27½	21⅙ 25⅙	No sign of coagulation at 90
Paraffin only full coating (Transfusion 17 * Dog 4)	0	215	0	15½ 17⅚	15½ 17⅚	15½ 18
Sodium citrate 10% sol (1 40 m.) (Transfusion 27 Dog 6)	1	265	38	7⅚ 11⅚	no clot at 60	No clot at 60
Sodium citrate 10% sol. (1 40 m.) (Transfusion 28 Dog 6)	1	265	38	9⅙ 12⅓	no clot at 54	45⅔ 52 (incomplete)

* Transfusion 10 and transfusion 17 with herudin and paraffin respectively are included in the table for purposes of comparison Where two sets of figures are given in columns five six and seven, the first refers to first appearance of fibrin the second to time of complete coagulation where but one figure is given, the time of complete coagulation is indicated unless otherwise stated

† Stained smear of this blood made at forty three minutes showed normal staining and morphology

‡ Stained smear of this blood made at forty two minutes showed normal staining and morphology

intravenous injection of large quantities of this drug and reported that the dose of 100 mg of herudin caused death in one dog, no ill effect in a second dog, and most alarming symptoms in a postoperative patient, so that she was in a precarious condition for over thirty-six hours Another physician has informed us that he employed this same dose (0 1 gm) in transfusing two patients by means of Kimpton's cylinders In one case there was no reaction whatever, and in the other case a very severe one Whether or not any of these reactions were due to the use of a toxic preparation of herudin cannot be ascertained, but the dosage noted above is far in excess of what we have recommended or deemed advisable Our observations with herudin have been confined to the commercial preparation manufactured by Sachse & Co , comprising five lots of 10 mg tubes of this substance purchased prior to Jan 1, 1915, and one lot purchased subsequently We have never used, whether experimentally or in clinical practice, more than 7 mg of herudin for transfusing 500 c c of blood, and in no one of numerous experimental transfusions on dogs have we had any ill effects from herudin in this proportion of admixture, although in some such cases we have removed and reinjected considerably more than the estimated total volume of the dog's blood We wish, however, to record here the following interesting facts in this connection, which are derived from our series of clinical transfusions We have made 14 clinical transfusions with herudin and 13 with paraffin Among the 13 paraffin cases there were no chills or febrile reactions, nor have we had any such manifestations following our citrate transfusions On the other hand, 6 of our 14 herudin transfusions were followed by chills and febrile reactions, and as these symptoms were associated only with the latter half of our herudin series, we are inclined to believe that they indicated some fault in the herudin which was used Although we have never had any such reactions in our experimental transfusions with herudin while following precisely similar technic, this may be explained by the fact that we were working in the laboratory with a different lot of herudin, or it may be that dogs are less susceptible than human beings to the contaminating toxic substance which was discovered in the commercial "Hirudin" by Marshall, just as this author found that rabbits were much less susceptible to its effects than dogs Other disadvantages of leech extract are that its activity is destroyed by heat sterilization, that it must therefore be produced under rigidly aseptic conditions, that it does not keep well in solution, and if so kept, should be preserved with the addition of some antiseptic such as thymol

Inorganic Salts —Many investigators have reported the effects on blood from a purely physiologic standpoint of various anticoagulant substances of inorganic origin The work of Burker and Deetjen,[16] Gessard,[23] Zucker[24] and Clowes,[25] is especially worthy of note in this respect The observations here reported were made in the course of an experimental study of the anticoagulative effects of certain calcium-converting agents, to determine the minimal proportions of admixture with blood which would be needed for transfusion with our apparatus and the relative safety and utility of these agents for this purpose The following substances were selected for examination sodium citrate, magnesium sulphate, sodium tartrate, sodium metaphosphate, dipotassium phosphate, sodium fluorid and sodium oxalate

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[23] Gessard Compt. rend Acad d sc , 1911 cliii, 1241 1913, clxvii, 799

[24] Zucker Proc. Soc. Exper Biol and Med 1914 xi 60

[25] Clowes Proc. Soc. Exper Biol. and Med , 1913 xi 1 ibid., p 4 Clowes and West Ibid p 6

By reference to Table 1 it will be seen that, with aqueous solutions of sodium citrate and magnesium sulphate, no precipitate is formed on the addition of calcium chlorid, whether in acid or alkaline solution or in any proportion of admixture With sodium tartrate and sodium metaphosphate a permanent precipitate is formed only when there is a considerable excess of calcium chlorid In the case of sodium metaphosphate the precipitate caused by excess of calcium chlorid disappears with the further addition of sodium metaphosphate solution

In determining the anticoagulative effect of these substances the plan of study was as follows

A dog was anesthetized with ether and the jugular and femoral veins were exposed and served as donating and recipient vessels for autotransfusion The transfusions were in all cases carried out by means of our special pipets and cannulas During process of transfer, the pressure exerted on the blood averaged 40 mm of mercury, and was controlled by a simple automatic contrivance so as never to exceed 80 mm of mercury The pipets were calibrated, of 300 c c capacity, and, just previous to use, were coated internally with an aqueous solution of the salt under examination In each instance from 215 to 265 c c of blood were withdrawn from the jugular vein, which required about two minutes As soon as the pipet was withdrawn from the cannula in the donating vein, about 5 c c of blood were immediately expelled from the pipet into a paraffin-lined test tube of 2 cm diameter The bulk of the blood in the pipet (from 190 to 240 c c) was then returned to the animal's circulation through a recipient cannula in the femoral vein, which required another two minutes, and, when this had been accomplished, another 5 c.c portion of blood from the pipet was expelled into a second paraffin-lined test tube immediately on withdrawal of the tip of the pipet from the recipient cannula The blood finally retained in the pipet, amounting to from 15 to 20 c.c., was laid aside and this portion as well as the two portions in the paraffin-lined tubes were inspected at short intervals for evidence of coagulation, and the elapsed time from the entry of the tip of the pipet in the donating vein to the first appearance of fibrin formation was noted, as well as the time when firm clotting occurred

Inasmuch as dipotassium phosphate, sodium fluorid and sodium oxalate form precipitates with calcium chlorid (Table 1) they were left out of practical consideration at the outset and very little was done to determine their relative anticoagulative effects Preliminary trials indicated that a solution of sodium tartrate equimolecular with 0 9 per cent sodium chlorid (m 1 54) had only a feeble anticoagulative influence A hypertonic solution (m 4 35) was therefore employed, but even with this concentration it was necessary to use from twice to ten times the amount necessary to coat the pipet in order to produce any appreciable anticoagulative effect Magnesium sulphate in m 1 54 solution showed a greater anticoagulative action than sodium tartrate, but neither showed sufficient effect to warrant further investigation, inasmuch as both of these substances have been shown to have a toxic action when injected intravenously[26] which would render them undesirable for use in any quantity It may be said, however, that in the amounts employed by us, neither of these agents appeared to exert any immediate effect on the experimental animal The tabulated results of experimental transfusions with sodium tartrate and magnesium sulphate are omitted for the sake of brevity

Having eliminated as undesirable five of the seven substances selected for study, there remains for consideration the action of sodium metaphosphate and sodium citrate A synopsis of experimental transfusions with these agents is given in Tables 2 and 3

Sodium Citrate—The intravenous use of sodium citrate, in any quantity, as a therapeutic procedure, is open to ques-

TABLE 3—EXPERIMENTAL TRANSFUSIONS WITH SODIUM METAPHOSPHATE

	Amount of Solution Used, c c	Amount of Blood, c c	Amount of Anticoag in 100 c c Blood, mg	Clotting Time in First Tube, Min	Clotting Time in Second Tube, Min	Clotting Time of Residual Blood in Pipet, Min
Sodium metaphosphate 1 57% (Transfusion 18 Dog 4)	1	215	7 8	11⅓, incomplete at 24 hours	No sign of coag at 24 hours	No sign of coagulation at 24 hours
Sodium metaphosphate 0.8% (Transfusion 21 Dog 5)	1	215	3 7	9⅓ 10⅓	10½ 15	5⅔ 9⅔
Sodium metaphosphate 1 2% (Transfusion 25 Dog 6)	1	265	4 5	8¼ 12⅔	22½ 24⅔	No sign of coagulation at 70
Sodium metaphosphate 1 2% (Transfusion 26 Dog 6)	1	265	4 5	12 16¼	19⅛ 28½	No sign of coagulation at 64½
Sodium metaphosphate 1 46% (Transfusion 30, Dog 6, nine days after last transfusion	1	265	5 5	13 17⅓	No sign of coag at 2 hours	No sign of coagulation at 2 hours
Paraffin only (Transfusion 31, Dog 7)*	0	265	0	17 19	16½ 18½	16½ 18
Sodium metaphosphate 1 46% (Transfusion 32, Dog 7)	1	265	5 5	13½ 16½	18½ 24½	13½
Sodium metaphosphate 1 5% (Transfusion 33, Dog 7)†	1	265	4 0	12¾ 13½	8⅓ 9½	9 11
Sodium metaphosphate 1 46% (Transfusion 34 Dog 7)	1	265	5 5	8⅓ 12⅔	8⅓ 11⅙	‡ Faint trace of fibrin at 11 No further sign of coag at 24 hr
Sodium metaphosphate 1 46% (Transfusion 35, Dog 7)	1	265	5 5	7⅚ 11⅓	18⅓ 19⅚	18⅚ 15⅓
Paraffin only (Transfusion 36,§ Dog 7)¶	0	265	0	18 22	16½ 17⅔	14½ 18

* Coagulation time of Dog 7, at commencement of operation (4 10 p m) was 6 min 15 sec The coagulation times here noted were determined by allowing blood from the jugular vein to flow through a gold cannula (15 mm long and 2 8 mm diam) directly into a clean glass test tube 15 mm in diameter Ten c c of blood was collected for each determination The fluidity of this blood was examined every ten or fifteen seconds, and the time noted when the blood was sufficiently coagulated to permit inversion of the tube

† Coagulation time of Dog 7, (4 42 p m) was 9 min and 30 sec

‡ Stained smear of this blood made at forty five minutes showed normal staining and morphology

§ Transfusions 31 and 36 with paraffin only were interpolated for purposes of comparison.

¶ Coagulation time of Dog 7 at end of operation (5 12 p m) was 7 min 10 sec tion on theoretic grounds from the experimental findings of several investigators, notably Gros,[27] Clark,[28] Sakai,[29] Salant and Hecht[30] There is, however, the recent assurance of those who advocate sodium citrate as an anticoagulant for transfusion that this substance can be injected with transfused blood in considerable quantity The amounts used by them in clinical practice range from 1 0 gm (Weil) to 0 2 gm (Lewisohn) per 100 c.c. of transfused blood These authors say that they have seen no undesirable effect of such dosage, although Weil has noted a change in the coagulation of the blood. In commenting on the change in coagulation time, which is induced by citrate transfusion, Lewisohn[1] says that 300 c.c. of a dog's blood removed by his method of transfusion mixed with citrate (0.2 per cent) and reinjected changed the coagulation time of the dog's blood from five minutes before operation to ten seconds when tested three minutes and again six minutes after operation

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[26] Meltzer and Auer Am Jour Physiol, 1905 1906, xv, 387 Joseph and Meltzer Jour Pharm and Exper Therap 1909 1910, i, 24 Salant and Smith Am Jour Physiol, 1914, xxv, 239

Rous and Turner,[31] in reporting their findings with respect to preservative fluids for red blood cells, refer to the transfusion of exsanguinated guinea-pigs and dogs with citrated blood by Weil,[32] and state that, according to their observations, human cells and sheep cells rapidly disintegrate in citrated plasma, whereas in the preservative solutions which they have devised these cells survive for considerable periods

Perfusion experiments indicate that sodium citrate has a potential toxic effect on the tissues of the circulatory apparatus which may be offset by the presence of available calcium, and that this toxic effect probably is prevented to some extent by the protective action of calcium ions in the tissues of the recipient. The mechanism of this protective action of the tissue calcium against the citrate ion is still a matter of speculation, but a most interesting and plausible theory of action has lately been formulated by Clowes[23] in a series of papers previously referred to The extent to which this calcium-ion conversion occurs in the circulating blood and in other tissues would seem to depend on the amount of citrate which is introduced. Gros[27] and Salant and Hecht[30] found that sodium citrate has a toxic action on the isolated perfused frog heart, the latter authors demonstrating a well-marked effect in a concentration of thousandth-normal in Ringer's solution, and that it exceeded oxalate and tartrate in toxicity Some as yet unpublished experiments in Professor Salant's laboratory in Washington[33] have shown that the intravenous injection of 100 mg of sodium citrate per kilo in rabbits has caused serious symptoms and death

Whatever the mode of action of citrated blood in transfusion, it is evident that when the citrate-ion concentration is sufficient to induce permanent incoagulability in vitro, the physicochemical effect in the circulation of the recipient must be considerable, and that this effect probably varies in direct ratio with the amount of citrated blood which is introduced For purposes of transfusion, minimum amounts of this agent would therefore seem advantageous, and this point we believe worthy of special emphasis We have previously found that the pipet-cannula method affords a technic which permits approximately one-eighth of the quantity of herudin which is necessary to produce an equal anticoagulative effect when using the simple syringe method, and a similar advantage is shown, by the present experiments, to hold true with sodium citrate In coating the pipets with this anticoagulant, 20 to 30 c c of a 10 per cent solution of sodium citrate is poured into the pipet just previous to use This fluid is thoroughly flowed over the interior of the pipet by rotating it in the horizontal position and all excess is then allowed to drain out through the tip, leaving approximately 1 c c of the solution which adheres as a thin film to the glass wall of the cylinder We have found (Table 2) that 100 mg of sodium citrate (1 c c of solution), when so used as a liquid coating in one of our pipets, is amply sufficient for the purpose of transfusing 250 c c of blood when used with our cannulas, and that the only fully citrated blood so treated is that small residual portion (about 12 c c) which is retained in the pipets That this residual portion of blood is usually subjected to a greater anticoagulant influence than the blood which is discharged from the pipet, may be seen by referring to the tables, and appears to be due to contact with a relatively larger proportion of the anticoagulant solution, which tends to remain adherent to the walls of the cylinder Without making any deduction on account of this greater proportion of citrate solution, which presumably adheres to the pipet and is not transfused, but remains in the residual portion of blood, it is evident that not more than 38 mg of sodium citrate per 100 c c of blood is necessary for transfusion by this method This proportion of citrate is from one twenty-fifth to one fifth of the amounts which are recommended by those who have used citrate as an anticoagulant with other methods of transfusion, and we believe that this proportion can produce very little disturbance of the circulating blood of the recipient, inasmuch as there was no noticeable effect on the coagulation time of the blood of the animals used in our experiments

During the past six months we have adopted this use of sodium citrate as an anticoagulant with our pipet-cannula apparatus in clinical practice and are well satisfied with its practical operation

Sodium Metaphosphate $(NaPO_3)_x$. The sodium metaphosphate used in these experiments was of C Kahlbaum's manufacture, and consisted of broken bits of vitreous fused plates, having a conchoidal fracture and a solubility of 5 5 parts in 100 parts of distilled water at 15 C A phosphorus determination, made for us in the laboratory of Messrs Eimer and Amend, indicated that it contained two atoms of phosphorus in its molecule, corresponding to the formula $(NaPO_3)_2$ or $Na_2P_2O_6$.

As to the toxic effect on animals of this salt, our preliminary experiments by intravenous injection of 1 6 per cent. solution in rabbits show that the minimum lethal dose for rabbits is between 80 and 100 mg per kilogram of body weight

The results obtained in experimental transfusions with this agent are shown in Table 3 and indicate, by comparison with Table 2, that it has a more powerful anticoagulative effect than sodium citrate in proportion to its weight. The susceptibility to recalcification of blood treated with sodium metaphosphate as compared with blood treated with sodium citrate is a matter which we have, as yet, only touched on in our experimental work We cannot therefore make any statement on the subject, as we have insufficient data for definite conclusions It would appear, however, to be worthy of further investigation as tending to show what, if any, derangement of the coagulative mechanism is produced by these agents as regards subsequent reactivation by ionized calcium.

SUMMARY

1 A better knowledge of the physicochemical changes which may occur in the blood of the recipient as a result of transfusion in varying pathologic conditions is needed in order to define more clearly the rational indications for this operation as a therapeutic measure

2 Certain hypotheses are suggested to explain the occurrence of febrile and toxic reactions following

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[27] Gros Arch f Exper Path. u. Pharmakol., 1913 lxxi, 395

[28] Clark Jour Physiol, 1913 xlii, 66

[29] Sakai Ztschr f Biol. 1914, lxiv 1

[30] Salant and Hecht Am. Jour Physiol 1915, xxxvi 126.

[31] Rous and Turner Proc. Soc. Exper Biol. and Med 1915 xii 124

[32] Weil Richard Sodium Citrate in the Transfusion of Blood, The Journal A M. A. Jan. 30 1915 p 425

[33] Personal communication.

transfusion which cannot be prognosticated by the existing laboratory tests for blood compatibility

3 Importance is attached to the belief that many of the febrile and toxic reactions, not to be explained by hemolysis or agglutination, are due to the transfusion of blood which is undergoing incipient coagulative changes, or which contains potential coagulative factors such as thromboplastin and thrombin

4 In judging of the safety of any method of transfusion, the extent and mode of action of the anticoagulant which is used, the toxicity of the substance, the amount of it which is necessary, and the mechanical technic in transferring the blood are the most important factors to be considered

5 The employment of an antithrombin such as leech extract or the commercial "Hirudin," while appearing to be ideal as an anticoagulant from the physiologic standpoint, is subject to uncertainty of action and possible danger from contamination with toxic substances Minimum doses of tested and standardized preparations and optimum anticoagulative technic should be used if such agents are employed

6 The use of paraffin is theoretically the method of choice in providing an anticoagulant agent for purposes of transfusion and has been found practicable, but not without certain precautions and proper apparatus

7 Of the inorganic calcium-converting agents which we have investigated experimentally, the citrate of sodium and the metaphosphate of sodium are the only substances which exhibit desirable characteristics Both of these salts, however, have toxic effects which demand consideration of the amounts which can be safely employed for purposes of transfusion Our experience with sodium metaphosphate is limited to experimental transfusion on animals

8 Sodium citrate in the proportion of 120 mg to 300 c c of blood, when used with the pipet-cannula apparatus and in the manner described, serves as an effective anticoagulant for transfusion This proportion (0 04 per cent) is from one fifth to one twenty-fifth of the amount of citrate necessarily employed with other methods Because of the considerations which have been discussed, we believe it to be the best method of transfusion for general use

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Street Dust and Disease—Following the announcement by the public health committee of the New York Academy of Medicine that a system of street cleaning which does not eliminate gross street dust and which employed dry sweeping methods cannot be satisfactory, a study was made by Prof Thomas W Hastings of Cornell University Medical School concerning the relation of street dust to disease On examination of the available data he summarized his findings about as follows Numerous bacteriologic examinations made in New York as well as elsewhere show that street dust contains a variety of living pathogenic organisms such as tubercle bacilli and various types of streptococci which are recognized as causative agents of many respiratory and other diseases Although few authentic cases of disease can be traced to bacteria in street dust, yet the fact that appreciable numbers are found in street dust and inhaled or ingested, establishes a presumption that street dust may be the cause of disease Studies of the incidence of respiratory diseases shows that persons free from exposure to city dust are less liable to suffer from such diseases Dust has long been recognized as an injurious mechanical irritant and as a cause of lowered bodily resistance Dry sweeping should be entirely abandoned, and street flushing should be introduced in street cleaning processes All efforts should be made to render streets as free from dust as possible

REACTIONS FOLLOWING BLOOD TRANSFUSION BY THE SYRINGE CANNULA SYSTEM *

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Since the simplification of technic,[1] blood transfusion has acquired considerable popularity The syringe cannula system has greatly simplified the procedure over the old arteriovenous method It now occupies a prominent and permanent place in the field of therapeutics Today a hundred transfusions are performed where one was done but a few years ago Though the technic has been thus simplified, there is a tendency on the part of some to slide over details of the work and, unequal to the task of even simple technic, they may resort to anticoagulants or inferior methods by which it may be possible to put blood into the patient even subcutaneously The attempt to simplify the method further has not been attended without the sacrifice of important points of merit The pitfalls and errors in the further simplification are the very things I have purposely avoided by the method originally outlined The operative procedure is a life saving measure and should be regarded as something more than an injection of saline fluid or salvarsan administration, and any tendency to curtail detail of execution to meet the convenience or inexperience of the operator at the expense of the patient should be discouraged

The reactions following transfusion will deter some from employing the measure with a patient in a critical state, in the fear of doing harm by the procedure itself, and the possible benefits to be derived may be overbalanced by the harm done In order for any therapeutic measure to gain wide favor, it must be free of any danger incident to the procedure itself, or at least a very high percental relationship must obtain between risk and gain It is my object in this communication to take up the problem of reactions to transfusion, to analyze their cause and to show the way to prevention

In the first eighteen transfusions which I performed by the syringe cannula system, preliminary blood tests were made in only two instances In this group of eighteen cases there were no chills and no fever reaction above 2 degrees The quantity transfused was small — never more than 700 c c The donors used were immediate relatives of the patients, and the diseases treated were not primary blood diseases (Primary blood diseases and infection offer most difficulty in finding compatible donors) The conspicuous absence of hemolysis in the absence of blood tests in sixteen of these cases must be attributed to good fortune Later in the course of the work, though blood tests were made in nearly all the cases, chills and fever were encountered more frequently

In the first 150 transfusions which were performed by the syringe cannula system,[2] the incidents of chill followed by fever were approximately 33 per cent The quantities transfused were usually 1,000 c c or more in adults The work was done in many different hospitals and in many different parts of the country, hence the preliminary blood tests of hemolysis and agglutination were necessarily done by many different serologists In the report of this group, mention was also made of three cases of hemolysis which occurred In these cases of hemolysis, the symptoms were carefully noted, and it was found that hemolysis is always accompanied by chills followed by fever Hemolysis never occurs without chills and fever unless the patient dies during or shortly after the transfusion The inference is therefore palpable that chills and fever reactions in transfusions are due to hemoglobin set free in the circulating blood The reactions are clinically similar to the chills and fever occurring in malarial fever, and are undoubtedly due to the same factor, namely, hemoglobin set free in the circulating blood When the hemoglobin set free is abundant, hemoglobin appears in the urine When the hemoglobin set free is moderate, only hematoporphyrin appears in the urine When the hemolysis is slight, the body is capable of utilizing and converting the slight amount of hemoglobin liberated, and no blood pigment appears in the urine When no blood pigment appears in the urine, the danger incident to transfusion is practically nil When blood pigment appears in the urine, the danger is very great and death may follow, especially when the patient is in an already precarious condition The procedure when hemolysis occurs, even when death does not occur, is robbed of its therapeutic value

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* Because of lack of space, this article is abbreviated in The Journal by omission of Table 1 The complete article appears in the author's reprints A copy of the latter will be sent by the author on receipt of a stamped addressed envelope

[1] Lindeman, Edward Simple Syringe Transfusion with Special Cannulas, Am Jour Dis Child, July, 1913, p 28

[2] Lindeman, Edward Blood Transfusion, The Journal A M A, March 28, 1914, p 993

In every case of hemolysis which was encountered clinically and in which the preliminary serologic tests were done, the hemolytic and agglutinin tests were repeated, and in each instance the incompatibility was detected in the second tests The second tests were invariably performed by a different serologist from the first, who knew nothing of the circumstances In one case opportunity was not offered to check up the accuracy of the laboratory work Since the laboratory failed me in several instances, it became apparent that some laboratory workers have their limitations, and that this possible error must be eliminated To do this, I set myself to the task of personally supervising the laboratory work in order to correlate the post-transfusion reactions with the tests It was further apparent that if hemolysis, when hemoglobinuria occurred, was due to faulty laboratory work, it might be possible by careful and refined methods of selection to prevent even a slight degree of hemolysis when no hemoglobin appears in the urine, and the reactions following blood transfusion in terms of chills and fever might thus be eliminated The results were gratifying, as is evident in Table 1 The tests were all made with very great care, and in some instances as many as twenty to thirty donors were examined from whom only one would prove satisfactory according to standard.

TECHNIC OF HEMOLYSIS AND AGGLUTININ TESTS

The red blood cells of patient and donor are washed three times with normal saline, variable quantities of patient's serum are placed in three separate small test tubes To each of these are added 0.25 c.c. of a 2 per cent suspension of washed blood cells of the donor The same is done with the donor's serum and the patient's cells Controls are made of donor's serum and donor's cells—patient's serum and patient's cells Controls are also made with donor's cells in normal salt solution and patient's cells in normal salt solution The total volume in each tube is raised with normal saline to 0 5 c c of volume. The test tubes are incubated in a water bath for a period of two hours, and readings are made They are then set in the ice-box over night and readings are again made the following morning When a case is urgent, the ice-box test is eliminated The ice-box test should be eliminated only when absolutely necessary by the extreme condition of the patient where time is the important factor When the amount of blood taken from the patient for tests is small, only 0 25 c c of serum is used, and controls of patient's serum are eliminated

RESULTS

In the last 155 transfusions performed by the syringe cannula system, the preliminary blood tests have been personally supervised in all but nine instances The reactions following transfusion appear in Table 1 Since the chills and fever reactions are due to hemoglobin set free in the circulating blood, it is necessarily a mass action and the degrees of reaction will depend on the amount transfused as well as the degree of hemolysis Hence, if any hemolysis occurred, the reaction should be greater when a larger amount is transfused than when a smaller amount is given Table 1 is intended to show quantities transfused, the disease treated, whether alien or family blood is employed and the degree of reaction following each transfusion

In this table of 155 transfusions, not a single case of hemolysis and not a single death referable to the transfusion occurred The tests were personally supervised in 146 transfusions, and they were not personally supervised in nine There were in all sixteen instances of chills followed by a rise of temperature There was a rise of temperature above 2 degrees without chills in twelve instances

TABLE 2—TEMPERATURE REACTIONS

Rise in Temperature		Fall in Temperature		
Rise Degrees	Number of Instances	Number	Diseases	Fall Degrees
From 2 to 3	18	1	Scarlet fever	2
From 3 to 4	2	1	Sepsis	1
From 4 to 5	5	2	Acute lymphatic leukemia	2, 1
From 5 to 6	3			
From 6 to 7	2	2	Typhoid	2 3
		1	Sepsis and anemia	4
		2	Aleukemic leukemia	2 1
		1	Septicemia	2
		1	Pernicious anemia	1

Of the nine cases in which the tests were not personally supervised, chills occurred in five instances, or 55 per cent In 146 cases in which the tests were personally supervised, chills occurred in thirteen instances, or 9 per cent Of nine cases in which the tests were not supervised, there was a rise in temperature in five cases, four of which varied from 2 to 3 degrees, and one from 5 to 6 degrees When family blood was used, 4 per cent had chills and 4 per cent fever, when alien blood was used, 6 per cent had chills and 16 per cent fever

In the 155 transfusions recorded in Table 1, there were 136,800 c c of human blood transfused with not a death referable to the transfusion Adults received from 1,000 to 1,800 c c in each transfusion Two donors were never used for one transfusion. The quantity enumerated was always taken from one donor No foreign substance or anticoagulants were employed in any case

CONCLUSIONS

1 The preliminary hemolytic and agglutinin tests when properly performed are reliable

2 Incidents of hemolysis in transfusion can be eliminated entirely

3 The reactions which follow transfusion when accurate tests are made are eliminated in all except 9 per cent of the cases In this 9 per cent of the cases, chills and fever alone occur When the quantity is 800 c c or less, chills and fever do not occur

4 By careful, accurate and complete hemolysis and agglutinin tests, when the work is done skilfully, blood transfusion is robbed of all danger attending its use This marks a step in advance because of the comparative simplicity of application

COMMENT

In the technic of blood transfusion by the syringe cannula system, the entire mass of blood is outside the body for a period of between six and ten seconds regardless of the amount transfused It passes through *a minimum amount of foreign material* Embolism or clotting never occurs in transit Syringes are never used for a second filling until thoroughly cleaned in sterile saline solution, because in evacuating contents of a syringeful of blood, a coating of blood remains on the inner surface of the syringe When a syringe is refilled without cleaning, the plunger naturally rides over the blood cells adhering to the wall, crushing and injuring them mechanically As the syringe is refilled, the injured cells are mixed in the blood stream and introduced into the patient To prevent this, no syringe is used for a second filling until thoroughly cleansed with sterile saline solution Syringes are cleaned as fast as they are used Clotting in the syringe cannot occur, and the blood is transferred uninjured, exactly as it exists in nature Anticoagulants or foreign substances are never employed There is no blind system into which air may leak There are no stopcocks, valves or rubber tubings about which blood may clot

40 East Forty-First Street

THE RELATION OF HEMOLYSIS IN THE TRANSFUSION OF BABIES WITH THE MOTHERS AS DONORS

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The new-born *infant* is *subject* occasionally to various pathologic conditions which to combat successfully requires the transfusion of blood Among these ailments the most frequent and alarming, and perhaps most fatal, is the hemorrhagic disease of the new-born The occurrence of this disease seems to vary in different institutions and localities *Townsend, collecting* his reports from the Boston Lying-In Hospital, found that it occurred in thirty-two infants out of 5,000 births Ritter found its occurrence in 190 cases out of 13,000 births at the lying-in hospital at Prague Epst[illegible]n, at the New York Foundling Hospital, found it in 8 per cent of infants, while the average treatise of children's [illegible]ses gives the proportion of 1 in every 1,000 births [illegible]

Clinically this disease can be divided into two classes

1 Those cases in [illegible]hich hemorrhage may occur from the mucosa of the gast[illegible]ro-intestinal tract, the stump of the cord, and subcutaneously, in all of which the diagnosis is easily made by the sight of a frank appearance of blood

2 Those cases in which the hemorrhage may occur in some internal organ, such as the suprarenals, peritoneal cavity, brain, lungs, etc It is in the latter cases, in which there is no apparent sign of bleeding, that the proper diagnosis may not be made at an early date; and when finally made, if the bleeding continues, the patient is almost exsanguinated, and the condition becomes a very grave and critical one

In the treatment of this condition, the use of animal's or human blood serum injected subcutaneously seems to supply the necessary elements to the blood to cause clotting (Welch[1])

Whole blood has also been injected *subcutaneously* for this ailment (Schloss[2])

With the institution of these methods of treatment, the mortality has been lessened to a considerable degree as compared with the older manner of treatment There are a great many failures, however, with a continuation of the bleeding process

Other investigators, endeavoring to improve on the serum treatment, attempted the transfusion of blood with very striking results The new blood supply adds those elements to that of the infant, which not only promote clotting, thereby causing the hemorrhage to cease, but at the same time increase its cellular elements and volume, thereby enabling it to carry on its functions in a proper manner Among those advocating the immediate transfusion of blood for this condition, and whose results have been highly gratifying, are Green[3] of Boston and Lespinasse[4] of Chicago

In the treatment of these bleeding babies by transfusion, we thought that the mothers might act as suitable donors for the transfusing of their own infants As the maternal and fetal bloods in utero are so closely related, the cellular elements being separated by a thin membrane, but allowing for diffusion of chemical elements, it is the natural supposition that complete compatibility of infant's and mother's blood should exist On consulting several well known serologists it was ascertained that all agreed on their probable compatibility, but they deemed it advisable to perform a preliminary *hemolytic and agglutination reaction* before using the mother as a donor for her infant In view of this fact it was our idea to establish the complete compatibility of mother's and infant's blood by performing a series of hemolytic tests on new-born babies and their own mothers There are several reasons why the mothers could be used as donors

In the first place, when an infant has had a severe initial hemorrhage leaving it in an exsanguinated state, the delay in such a case in procuring a compatible donor on whom the preliminary tests should be made may be fatal to the infant If it is known beforehand that the mother's blood is compatible, she can be used as the donor without the delay of making these tests, and perhaps the infant's life will be saved by supplying it in time with sufficient blood

In the second place, when the bleeding is discovered during the night, the procuring of a proper donor would entail considerable delay, such an emergency can well be overcome by using the mother to supply the necessary blood

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[1] Welch, J E Am Jour Med Sc., 1910, cxxxix, 800

[2] Schloss, O M, and Commiskey, J J Spontaneous Hemorrhage in the New Born, Am Jour Dis Child, April, 1911, p 276

[3] Green, C M Boston Med and Surg Jour, 1914, clxxi

[4] Lespinasse, V D The Treatment of Hemorrhagic Disease of the New Born by Direct Transfusion of Blood, The Journal A M A, June 13, 1914, p 1866

In the third place, in certain localities where no laboratory is at hand and such a condition should arise, it is advantageous to know that a compatible donor is nearby

Again, the element of expense enters into the transaction in a certain number of cases By using the mother to supply the necessary 60 or 70 c c of blood there would be the saving of a laboratory fee and the payment of an outside donor, if no member of the immediate family were available

It is well known that under certain circumstances emergency transfusions have been done without the preliminary hemolytic tests being performed, the operator trusting to good fortune as to the compatibility of the recipient's and donor's blood Under these circumstances in the case of a bleeding baby it would be a safe thing to use the mother as donor With this object in view, it was our intention to perform a sufficient number of tests on mother's and infant's blood to establish the fact of their complete compatibility, so that the mothers could be used in cases of emergency without fear of any injurious effect on their infants It was first decided to perform 100 tests, but as the results were so uniform, thirty-four tests were finally deemed sufficient

The following is the description of the tests carried out on patients in the obstetric ward of the Harlem Hospital

All syringes, glassware and other materials used in the tests were dry sterilized The mothers were bled by drawing from a vein at the bend of the elbow about 20 c c of blood Five c c of this were placed in a test tube containing glass beads, and the tube was shaken for five minutes This defibrinated the blood with resultant mother's corpuscles The remaining 15 c c of blood were placed in a test tube on the slant and kept at room temperature until clotting had taken place It was then placed in the incubator at 37 C to facilitate separation of the serum.

Twenty-three babies were bled by making a deep incision in the heel, and the blood made to flow by making compression on the lower part of the leg Blood from nine babies was obtained at the infantile end of the cord before ligation, and from three babies at the maternal end. This blood was treated in a like manner to the mother's The defibrinated blood was washed and centrifuged three times in physiologic salt solution Of the washed corpuscles a 5 per cent suspension was made by taking 0 5 c c of corpuscles and 9 5 c c of saline Of this 5 per cent. emulsion of red corpuscles, 0 5 c c was used, to which was added 0 5 c c of serum, so that mother's cells were treated with baby serum, and baby's cells were treated with mother's serum Controls of saline and corpuscles, both mother's and baby's, were made in each case The agglutination test was made grossly by the ocular method

In the thirty-four tests that were carried out on the mothers and babies, no hemolysis or agglutination occurred From these experiments we have concluded that all mothers can be used as donors for their infants in the transfusion of blood, provided no contraindications exist on the part of the mothers

Since these conclusions have been drawn as the result of these hemolytic reactions, one bleeding baby has been transfused at the Harlem Hospital in the service of Dr G L Brodhead This infant began to bleed on its second day of life from the nasal mucosa, from the bowels, from the cord and from the kidneys Without any preliminary blood tests the mother was used as a donor, and the infant was transfused with 60 c c of blood through its external jugular vein The method of introducing this blood was by the indirect syringe procedure, and the apparatus devised by Dr Lester Unger was used One hour after the transfusion no bleeding occurred from the wound made over the jugular vein, and six hours later the stools were free from macroscopic blood and there was no further bleeding from any portion of its body

It has been estimated that the volume of blood possessed by an infant is one twentieth of its body weight In an infant weighing 7 pounds the amount of its blood supply would approximate 5⅗ ounces A well known clinical observation is that if one third of the entire blood supply is lost by hemorrhage, there is grave danger of death taking place Therefore, to transfuse a baby who has lost sufficient blood for symptoms of exsanguination to be present, it is important that a known quantity of blood be thrown into its circulation If a too large amount enters the circulation, the heart muscle, already weakened by hemorrhage, may become acutely dilated, and death occur from a measure that is meant to be therapeutic We have estimated that from 60 to 75 c c of blood are approximately sufficient to supply the infant with the necessary elements to promote clotting and enough cellular elements to replace those lost by hemorrhage This is an important reason why the indirect method of transfusion should be practiced on these bleeding infants, as well as the argument for its simplicity of technic

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COMPLICATED NERVE TISSUE INVOLVEMENT ARISING FROM SYPHILIS OF THE VERTEBRAE

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Syphilis of the vertebrae has been infrequently reported There were but 100 cases available for analysis[1] in 1912 Neural complications generally accompany this disease, they are often obscure, and many times are extremely grave Frequently it is through some manifestation in the widely varying symptomatology arising from the nerve involvement that the existence of the osseous disease is suggested, rather than through any symptom arising directly from the spondylitis It is with the neural features in syphilitic spondylitis that this paper deals

A striking combination of such neural complications as may be found in this disease was presented in one of my recent cases, which well illustrates the diversity of clinical manifestations which may spring from such spinal axis involvement

On admission to the hospital, the patient showed alarming symptoms arising from loss of sensation about the larynx, pharynx and esophagus This impaired sensory condition pointed to disturbance in the cervical and medullary regions of the cord There was at the same time loss of sensation in the bladder, rectum and lower extremities The latter sensory condition pointed to disturbance in the lumbosacral region of the cord

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[1] Hunt J R. Am. Jour Med. Sc. August 1914

There was some ulceration of the pharynx, and an obstinate cough occurring frequently in paroxysms, attended by the expectoration of thick whitish sputum in great quantities and by the regurgitation of food The patient soon became unable to swallow at all, being given all nourishment through the stomach tube, and rapid emaciation took place The history elicited some significant facts There had been attacks of sore throat and "rheumatism" for the past seventeen years (The patient was a man aged 52) There had been an attack of gonorrhea at 21 For a year and a half "things hadn't tasted right", there had been anorexia, flatus and obstinate constipation The use of alcohol, excessive for a number of years, had been discontinued for a year and a half

The urgent throat and respiratory symptoms demanded immediate attention Laryngologic examination made by Dr Chevalier Jackson demonstrated the following[2]

"Laryngeal motility was found to be perfect The pyriform sinuses were full of secretions A bronchoscope was passed to the bifurcation of the trachea without anesthesia, general or local, and there was not the slightest sign of a cough reflex Esophagoscopy showed presence of cricopharyngeal and hiatal contractions, though very weak and unlike normal spasmodic resistance to the advance of the esophagoscope A 10 mm by 53 cm esophagoscope passed readily into the stomach There was no gagging retching or attempt at vomiting The author made a diagnosis of sensory paralysis, with consequent absence of the normal serial deglutatory reflex"

The neurologic examination (case referred to me by Dr E B Haworth) revealed not only subjective symptoms confirmatory of the foregoing cervical involvement, but also subjective symptoms pointing to lumbosacral involvement Indicative of the lumbosacral disturbance were a feeling of numbness and weakness in the legs, having covered a period of two years, and often being accompanied by a sensation of pin-pricking in the thighs, latterly there had been obstinate constipation, the patient had been entirely unaware of any desire to urinate or defecate for the past month, merely going mechanically at stated times for the performance of these functions, the urinary stream was started by the patient placing his hand in cold water, or by the sound of running water (psychic stimulus), the patient had been impotent during the past two years, though normal sexual desire had been present The mental condition was normal except for considerable anxiety regarding himself

My report on the reflexes was as follows pupils irregular and unequal (right, 4 by 4, wider below, left, 3½ by 3½, wider above), reactions to light and accommodation about normal, arcus well marked Reflexes in upper extremities equal on the two sides but somewhat exaggerated The knee jerks were entirely absent, plantars lively and no Babinski, abdominal skin reflex absent and cremasteric very sluggish There was some rombergism The spine below the lower dorsal region was held rigid during attempts to bend the trunk forward, and the knees had to be flexed if this angle exceeded 40 degrees Sensation for pain was diminished from the crests of the ilia to the soles of the feet, increasing from above downward, with the analgesia very marked about the soles The patient could pucker the lips, but the tongue protruded slightly to the left

The laboratory reported that the sputum was negative for tuberculosis, the urine exhibited a slight glucose reaction, there was moderate blood leukocytosis and the Wassermann was negative The spinal fluid showed 5½ lymphocytes to the cubic millimeter with heavy globulin precipitate

The roentgenographer reported an osteo-arthritis of the lumbar and cervical vertebrae, numerous small osseous spicules could be seen projecting especially from the lips of the vertebral bodies

The roentgenographic report was of the greatest assistance in affording an explanation for the neural complications It was probable that the symptoms were, in large measure, a result of compression of the spinal cord and nerve roots by the exudative processes incident to the spondylitis The striking characteristic of this case was that the symptoms were almost entirely sensory in character There was a remarkable parallelism between the symptoms affecting the centers in the medulla (those controlling deglutition, coughing, respiration, etc), and those in the lumbar region (sacral segments—those controlling micturition, defecation, erection, etc) Above, sensation was lost in pharynx, larynx and esophagus, below, sensation was lost in the bladder, rectum and genitalia In other words, the upper reflex arcs, on whose integrity the acts of swallowing, normal respiration and coughing depended, were paralyzed on their sensory sides, while the lower reflex arcs for micturition, defecation, erection, etc, were paralyzed on their sensory sides, also All of these reflexes were either abolished or greatly crippled

Such a similarity in lesion indicated a common causative agent The course and duration of the symptoms, their unusual and symmetric distribution, not corresponding with those of any of the systemic nervous diseases, together with laboratory reports, pretty definitely eliminated tuberculosis and carcinoma, the two diseases most likely to come into question in view of such symptomatology Alcohol, even as an active contributing factor, could be excluded on the ground of its having been discontinued for the previous year and a half Rheumatoid arthritis does not exhibit such sporadic spinal distribution Therefore, though history of syphilis had been denied (Neisser admitted), and in spite of a negative Wassermann,[3] a diagnosis of syphilis of the vertebrae, manifesting itself through its effects on the medulla and cord, was made The heavy globulin reaction in the spinal fluid indicated an active inflammatory process The sensory symptoms were indicative of pressure rather than of meningeal irritation alone

A consideration of the course of the spinal segments through the intervertebral foramina, and of the cranial nerves (ninth, tenth and eleventh) along the base of the skull and through the jugular foramen, makes plain the pressure possibilities to which these nerves might be subjected by the acute inflammatory exudative processes incident to the osteitis which was revealed by the Roentgen ray It should be noted in this connection that bone syphilis affects the base of the skull and the cervical vertebrae more frequently than other parts of the vertebral axis

The unlimited variety of symptoms, arising from the manifold neural lesions occurring in syphilis affecting the central nervous system, is exemplified in this case by still further ramifications of the disease process The anesthesia of the lower extremities indicated that the pathologic condition extended beyond the sacral segments into the lumbar segments of the cord which supply the skin area, in great measure, of these extremities There was also some extension of the pathologic condition in the cervical region beyond the cranial nerves mentioned, as evidenced by a "girdle sensation" in the arms, pupillary, tongue and taste deviations, and transient diaphragm palsy There was further evidence of motor involvement in the fact that there was a left shoulder-arm paresis, this pointing to brachial plexus implication

Immediately on the institution of antisyphilitic treatment (mercury and potassium iodid), symptoms began to show improvement Just before the treatment was begun there was an alarming crisis characterized by extreme dyspnea, the respiration becoming of the Cheynes-Stokes type, nausea, with paroxysms of abdominal coughing in attempts to expel the tenacious mucus, the pulse was weak, and the face was cyanotic Oxygen and other stimulants were used Within

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[2] Jackson, Chevalier Peroral Endoscopy and Laryngeal Surgery, St Louis, the Laryngoscope Company, p 557

[3] Whitney, J L, and Baldwin, W I Syphilis of the Spine, The Journal A M A, Dec 4, 1915, p 1993

a week after treatment had been begun, coughing and sputum were much less and respiration was easier By this time sensation was beginning to return over the thighs and legs, but there was no sensation until later for pain or pressure over the buttocks, scrotum or the soles of the feet Persistence of anesthesia in these localities may be accounted for by the fact that the osseous process impinged most markedly on the sacral segments of the cord At the end of two months the patient was able to swallow solid food, and fairly normal sensation for urination and defecation began to be experienced In a short time the patient returned to his regular occupation of salesman, at which, a year and a half later, he is still engaged At present the patient complains of weakness in the left arm and some numbness in the soles of the feet

The extent of the symptomatology here again drives home the fact that the importance cannot be overestimated of eliminating cerebrospinal syphilis as etiologic in every obscure or indefinite clinical picture The foregoing is but one of numerous instances, coming under observation, in which final decision as to diagnosis has rested on clinical findings in the face of negative laboratory reports

THE RELATION OF THE LABORATORY COURSES TO THE WORK OF THE CLINICAL YEARS*

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First, I tried to work out this relation on the family basis I said, "Medicine is the mother of physiology," and I prepared to come here and paint a pretty picture of physiology taking care of mother in her old age But when I looked around for father, my trouble began I found that medicine had a promiscuous lot of children—quite a heterogeneous household ranging all the way from substantial oldest son, anatomy, to sapheaded chiropractic I became fearful of discovering a scandal and gave up the idea of family relationship

Then I thought it might work out better on a basis of phylogeny "I will construct," I said, "a scheme of relationship by descent I will study the evolution of the medical sciences—develop the tree of race relationship"

The plan looked hopeful There was the gnarled but sturdy old trunk of medicine extending down into the subsoil of unrecorded history Even as deep as one could trace the roots there were nodules of anatomic fact apparently flourishing and metabolizing nitrogen in a moldy sap-wood of religious superstition But after I had thus got anatomy nicely placed among the roots, I wanted to use it later as a branch, and encountered botanic difficulties The only thing I could think of was a banyan tree

Moreover, considering the religious affiliations of medicine in history, I was afraid if I established evolutionary relationships I should find Christian Science as a large, green and flourishing branch of the medical tree Then, too, I found that medicine interbred with every science and every form of speculation I observed that ophthalmology was medicine crossbred with physics I considered that bacteriology evolved from the false philosophy of spontaneous generation and got itself grafted into medicine secondarily My tree would not grow according to good botanic principles I foresaw such a storm about acquired characters and sports and cross-fertilization and mendelianism that I gave up the theory of evolutionary relationship

Next I tried the analogy of master and workman I recalled a word frequently heard at these meetings, a fine sounding, resonant word "ancillary" The ancillary sciences working for the master science of medicine It sounded pretty good and seemed capable of development as the text for this occasion But I looked up "ancillary" in the dictionary and found it was derived from a word meaning female slave I began to imagine medicine not exactly as a science but rather as a gatherer of science's harvest—medicine as the slave owner living in the big white house That was familiar But I saw also poor physiology, the female slave, scourged to her quarters Serene in the manifest superiority of the spirit, she nevertheless appeared the helpless victim of an hereditary ruling class I could not stand such a picture, and gave up the relation of master and servant as the analogy for this symposium

By this time the hour of this meeting was drawing near I saw that if I were intelligently to discuss the relation between the laboratory sciences and the work of the clinical years, I needed to know something about the clinical years So I followed a master of diagnosis in his day's work I saw him percuss and auscultate, I saw him count corpuscles and analyze excreta, I saw him elicit reflexes and measure temperature, I heard him speak of valves and pressure and enzymes and neurons and calories I said "That man is not practicing medicine He is practicing physiology" I watched a therapeutist at the bedside and found that he was not practicing medicine but pharmacology I saw a surgeon earning a thousand dollars I discovered that he was not practicing surgery but anatomy, pathology, physiology and—high finance! Finally, the relation I was seeking came suddenly into mental view Anatomy and physiology and pharmacology and bacteriology and chemistry and the rest are not the children of medicine, they are not the branches of an evolutionary tree, they are not handmaids, they are not stepping stones or preparatory stages They are IT They are medicine itself

Every correct observation of function or disorder, every established fact of structure, every corroborated discovery in the field of causation or in the domain of restitution, every correctly interpreted experiment in test tube, animal or man, whether made by layman or practitioner or professional scientist, is describable in the terminology of the fundamental sciences, and is really a constituent part of those sciences These make up medicine as a real living body For clothing there is folk psychology, a modicum of ritual, that indefinite confidence-producing mantle called personality, a veil of magic, and a vanishing hat, labeled "empiricism," with a hole in it through which talking may be done But all these are outward habiliments The warm, breathing, vital entity is science—the medical sciences or the science of medicine

To this fertile thought I invite your attention I acknowledge that it is perhaps only a half truth But who wants to hear the whole truth? The whole truth is too static, embalmed, petrified I acknowledge, too, that our thesis is not wholly consistent, but consistency, you remember, is a jewel, and as such reserved for the ladies—and special occasions

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* Read in a symposium on the 'Relation of the Laboratory Courses to the Work of the Clinical Years' at the Twelfth Annual Conference of the Council on Medical Education of the American Medical Association Chicago Feb 7 1916 abstract of discussion Society Proceedings The Journal A. M A, Feb 19, 1916 p 596

Anatomy, chemistry and the rest are not preparatory to medicine, they are medicine itself They are provinces, not independent kingdoms The doctrine of sovereignty does not hold among the sciences nor in medical teaching Boundaries are set, but they are imaginary lines, not Chinese walls They do not impede the exchange of ideas nor hamper the free movement of the products of research

"But surely," some physicians will say, "Surely such extravagant statements should not be permitted to go unchallenged We admit that some anatomy is medicine, that some physiology is medicine But a good deal of anatomy is just anatomy, a good deal of physiology is just physiology And surely medicine is more than these sciences" I am prepared to defend my trenches against such bombardment

If some physiology is medicine and some is not, it is implied that some one should select what is and what is not It is further implied that what is medicine should be taught to medical students, and what is not medicine should either be omitted from the curriculum or gingerly and to a limited extent admitted to keep the physiologist good-natured Something like this reasoning influences the clinical teacher when he approves of our teaching the number of corpuscles and the character of the heart sounds and the percentage of hydrochloric acid, but decries the work on muscle and nerve or the teaching of physicochemical theory But surely if the medical practitioner is to be more than a pill-roller, if the surgeon is to be more than what one well-known surgeon calls himself, a plumber, it must be because there is in him that lively appreciation of fundamental biologic facts which makes him picture the marvelous mechanism of the body responding to the multitudinous and varying stimuli of the environment. There is no class of experiments so well adapted to give such a concept as those on muscle and nerve There is no single experiment so useful for teaching the essentials of deductive logic as the curare experiment There is nothing so essential for medical progress as the intelligent use of hypothesis The physiologic theories of the nature of stimulation, conduction, secretion and contractility are inspiring examples of the hypothesis as an effective weapon in the boundary warfare between ignorance and knowledge—a warfare in which every progressive medical man should be enlisted for lifelong service

Indeed, if I analyze the working of the clinical mind correctly, it makes use unconsciously of the concepts and theories derived from the fundamental sciences, which on the surface of consciousness it denunciates as unpractical They are unpractical perhaps in that they do not make for a defter hand or a sharper eye But they are intensely practical as the invisible warp into which is woven the thought stuff for "practical" conclusions

There is another side to this proposition If we acknowledge that a given fact or theory is devoid of practical value today, who shall decide as to the future? In my teaching experience I have seen the taking of blood pressure transformed from a laboratory fad to a clinical routine, I have noted embryology influencing surgical procedure, I have seen the action current become the basis of electrocardiography, I have seen the theoretical chemistry of the proteins become the cornerstone of dietetics, I have seen men who, as students, complained of the introduction of physical chemistry into physiology, later as clinicians attempting to measure and understand hydrogen ion concentration

Let us not, then, be too narrowly restrictive with the fundamental departments Whatever is good anatomy is good medicine Whatever is good physiology is good medicine In giving the well-rounded training which will make his science a living entity, the anatomist or the physiologist or the pathologist or the chemist may be trusted to include the so-called practical matters which are the outward manifestation of medical practice, just as he may be trusted to do his best to instill the methods and powers of observation, experimentation and orderly reasoning which should be the inward essence of medicine itself He may be trusted, I add, so to steer the ship of research that, though it skirt uninhabitable shores and though it penetrate many an unpromising inlet, in the end it will discover safe anchorage and will chart out passages by which the commerce of applied science may pass into now unknown seas

I regard our combined courses and the arrangements by which the science departments belong alike in the college and in the professional school as an admirable device for avoiding, on the one hand, too remote and general development, and, on the other, a narrow utilitarianism The latter, to my mind, is the popular error We worship Edison instead of Faraday, Lister instead of Pasteur Of the commoner sin we should be most on guard

Again, if my thesis as to the nature of medicine is correct, and if the student in his first two years is as truly learning medicine as in his last two years, we should all unite to disabuse his mind of its familiar error as to the nature of the laboratory courses, and get him to see the steps of his education in a truer light In this the clinical teachers can be of great assistance In this, too, if anywhere, lies the justification for clinics and lectures by clinical men to make clear to freshmen and sophomores the application of the facts and theories which they are learning in the fundamental departments That clinicians in order to do such work satisfactorily should be thoroughly trained in and sympathetic with the sciences goes without saying

The obverse is equally true As clinical teaching becomes more scientific, the student is likely to see in his later years the necessity for further laboratory training And we have the argument for such an arrangement of curriculum, such a recognition of the elective principle and elastic program that he can get this training easily and systematically

Moreover, if my thesis is even approximately correct, the professors of surgery and medicine should expect to teach anatomy, physiology, pathology, etc, as part of their regular work Instead of complaining because the students who come to you do not know it all, you should look on yourselves as duly appointed to teach these sciences and to continue the training of the juniors and seniors along the very lines laid down in the first two years Thereby the marked break at present existing between the first two years and the last two years would in large measure be avoided

In the text of this homily lies, furthermore, the best argument for the unity of medicine Did anyone ever hear of chiropractic chemistry or osteopathic physiology or even homeopathic pharmacology? There are no sects in science There will be none in medicine when medical men and their patients appreciate what medicine is and what it can do and cannot do That joyful but distant millenium awaits the universal development of the scientific mind It may come Who knows? Think of the progress of the last four hundred years Let us begin by making the doctors more scientific

Finally, if my thesis and what I have founded on it are correct or only half correct, there can be no doubt that clinical teachers should be better trained in the sciences than has been common in the past The ideal clinical teacher is one who has founded an adequate training at the bedside on from three to five years of graduate study in a productive teaching laboratory, or who has served as assistant for a long time in a clinic which has as adjuncts such laboratories with trained scientific leadership This is the reform for which Graham Lusk has worked in New York, and which many medical educators have recognized of late as the greatest need in our schools as a whole Unfortunately, conservatism and vested right and, worst of all, a dearth of teachers of this type, have made progress slow But I believe we have passed the critical point and that development in the clinical branches is about to parallel that which took place a few years ago in the scientific departments Men are beginning to prepare themselves for clinical positions as definitely and from the same professional standpoint as for positions in the laboratories of anatomy, physiology and pathology We in administrative authority in universities are beginning to look for a clinical teacher in just the same way that we look for a chemist or a historian I am persuaded that in our clinical departments in the next generation we shall have leadership and a nucleus of organization in practically full-time teachers who have had intensive laboratory training and are primarily medical scientists Around this nucleus will be part-time men who practice medicine as well as teach, and who carry into both the ideals and the habits of thought of the scientific leaders Beyond these I see a great profession increasingly benefited and ennobled by the same ideals, habits and methods reflexly acquired while in school and enforced in after life

This is my thesis, my creed, my optimistic hope It is in the failure of us science teachers to realize our part of it that I find my moments of discouragement In how many of our students do we fail to establish logical habits of thought, fail to create a critical attitude toward authority, fail to found a confident reliance on observation accompanied by an appreciation of the limitations and pitfalls of the senses, fail to awaken the imagination and to kindle such a fervor for science that the constant cry shall be "What, How and Why," fail to establish sleepless guard against that insidious enemy of the understanding, *post hoc ergo propter hoc* —in how many of our students, I say, do we science men fail to do these necessary things? The number is large, I am sure

I try to believe that our poor results are due to poor training in the premedical years, or in high school or earlier still I try to convince myself of the inherited inability of many to observe correctly or think logically I try to persuade myself that we turn over to the clinical teachers a pretty good product, and that the latter destroy our good work by methods of didacticism, empiricism and worship of authority Nevertheless, with all due allowances I come back to the physiologic laboratory in fear and humility, for I feel that better pedagogic leadership would give better results I wonder whether we shall some day have medical normal schools and teachers who shall teach us how to teach

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RELATION OF THE PRECLINICAL LABORATORY COURSES TO THE WORK OF THE CLINICAL YEARS *

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The problem of the relation of the preclinical laboratory courses to the work of the clinical years is one that must interest every teacher and every student in a medical school It is a problem that will often occur, for the aspects of medicine as a whole and of its constituent and underlying sciences are ever undergoing changes that require, at comparatively brief intervals, corresponding readjustments of the medical curriculum The most that we can do at any one period, after formulating sound general principles regarding the relationships that should exist, is to make the adjustments desirable for the period, understanding that these adjustments are but temporary and must, of necessity, give way, later on, to others

That I have been invited to participate in this discussion is, I take it, partly because of the schools in which I have had opportunity to teach, but more because of the fact that for twelve years I was a teacher of two of the preclinical laboratory sciences (anatomy and pathology), and that for the ten years which followed I have been almost wholly engaged in the teaching and practice of clinical medicine This experience has given me sympathy with, and at least a certain understanding of, the aims and needs of both the preclinical and the clinical sciences Several ideas regarding the principles that should be followed in planning the medical curriculum and regarding the readjustments of the present methods of teaching seem to me valid, and I shall be glad to know whether or not you, also, approve of them

The reinstatement of the medical faculties of our universities in the respect of the world of scholars has undoubtedly been due to the astonishing growth of the scientific spirit among medical men and to the remarkable expansion of our knowledge of man and of the diseases that endanger his life and his health through the rise of the methods of research in the natural sciences These methods have been and are now being applied with great zeal to the study of the structure and function of living organisms No small part of the progress has been due to the devising of new methods of investigation that have been perfected in laboratories Intensive work has required an ever-increasing division of labor in research, with specialization of the fields of investigation and constant additions of departments and professorships in our universities and medical schools The new knowledge that has been acquired, and the new forms of technical procedure that have been elaborated, have revolutionized our ideas of the nature and causes of disease, have enormously extended our methods and conceptions of diagnosis, and have led to a truly astonishing advance in rational therapeutics It is no wonder that the medical course has been lengthened, for the amount of clinical as well as of preclinical training that is considered desirable before graduation has steadily grown

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Now, obviously, the total length of time required for the medical student's training preliminary to graduation dare not be too greatly prolonged, moreover, during this limited time the student's brain has only a certain capacity for the acquisition of knowledge, for the understanding of principles, and for the learning of practical-technical methods of investigation The questions that we, as medical educators, must ask ourselves, are 1 What principles shall guide us in the construction of the preclinical and clinical curriculums? 2 What readjustments ought we now to make to bring our curriculums into accord with these principles?

A wise decision in the second matter will depend on finding a correct answer to the first question That medical educators have given a vast deal of thought to these topics, every one knows That, in general, sound principles have already been laid down, and the curriculums more or less adjusted to them, we may feel tolerably sure But that considerable dissatisfaction both in the preclinical and the clinical branches still exists must also be freely admitted And I believe that a thorough discussion of the subject such as we have entered on today is exceedingly timely It will show us, I believe, that the discontent is due partly to disagreement regarding the principles that should guide us, and partly to failure to provide the conditions that conform to certain principles that all now accept

We rejoice in the fact that there is no longer dissent from the view that, precedent to undertaking the more complex medical sciences of diagnosis and therapy, a considerable training in the preliminary natural sciences (physics, chemistry and biology), and education in the simpler medical sciences (anatomy, physiology, pharmacology and general pathology), are imperative I speak of the "more complex medical sciences of diagnosis and therapy," for the time has passed when the work of the clinics could be regarded as something that is not scientific—as something merely practical or technical to be sharply distinguished from the "theoretical" or "scientific" work of the preclinical sciences Workers in a modern medical or surgical clinic, or in the active clinic of a specialty, smile today when they read the addresses of well-meaning educators of a few years ago in which "medical science" was contrasted with "clinical medicine," or in which it was asserted that "the problems of clinical medicine differ from the problems of the laboratory," or that "a sharp break occurs at the middle of the four years' course when the student drops his science (sic) and turns eagerly to the clinic" A brief sojourn in one of our better clinics today should quickly disabuse the mind of any educator who harbors the illusion that such comments could still be justified It is matter for congratulation that diagnosis and therapy now have connotations other than those implied even a decade ago The clinical subjects, at least in our better medical schools, are now recognized as sciences differing from the simpler medical sciences chiefly in their complexity rather than in loftiness of ideals or in the methods by which they are cultivated They, like the preclinical medical sciences, are now laboratory subjects also, only rather more so, since adequately to study a clinical problem there may be needed not only (1) a considerable knowledge of the preliminary natural sciences and of all the simpler intermediate (preclinical) medical sciences, but, in addition, (2) a knowledge of the clinical subject itself and (3) an ability to use in the inquiry any of the principles and technical methods of any one of the ancillary simpler sciences Obviously, the requirements of the clinical problems tend to transcend the power of the single investigator, and there is an ever-increasing tendency to subdivision of the problems on the one hand, and, on the other, to group-cooperation in the larger investigations Indeed, the expansion of the laboratories of the clinics is going on so rapidly, the opportunities for fruitful work in these laboratories are being so rapidly multiplied, and the problems themselves are being found so interesting and attractive, that even the more idealistic of our younger investigators are aggregating in the clinics, and there is real danger that, temporarily at least, the supply of investigators and teachers for the simpler preclinical sciences may be too much curtailed

On turning over in my mind the differences of opinion that exist regarding the principles that should govern the arrangement of the preclinical curriculum, it seems to me that those that are outstanding are included in the following list

1 Differences in opinion regarding the functions of the medical schools

(*a*) Whether they shall be simply schools for imparting knowledge already acquired, or shall also be institutes for extending knowledge by original investigations

(*b*) Whether their functions shall consist wholly in the training of future practitioners of medicine, or shall include also the training of men for other purposes

2 Differences in opinion regarding the mode of teaching to be employed

(*a*) Whether the teaching shall be conducted so that each science is taught for its own sake irrespective of its immediate bearing on the work of the clinical years, or so that the teaching of each science shall from the very beginning be strictly controlled and directed with exclusion of matter not of immediate utilitarian value for the clinics

(*b*) Whether the teaching shall attempt chiefly the imparting of the facts of each preclinical science, and if so in how great detail, or chiefly the general principles of the science, illustrated by experiment, and combined with practical exercises by the student—exercises that will acquaint him, at first hand, with the methods of original inquiry and scientific experiment, in the hope of arousing and cultivating in him the scientific habit of mind

Even a concise discussion of these several opinions would require an essay of considerable length I shall give briefly my own impressions regarding some of these debatable questions, and I shall mention a few of the arguments in their favor that seem to me cogent If I do not bring forward a larger mass of evidence now, it is partly because the time limit forbids, and partly in the hope that the very incompleteness of my treatment of the subjects may be an incitement to a lively general discussion

Taking up the first point, I am still convinced that the medical schools should, as integral parts of universities, be scientific institutions in which teaching and original research shall both have a place The advantages of this combination are so generally recognized that I need not labor the point But the union of scientific productiveness with the teaching function has also its difficulties and its dangers, especially in the medical school The professor, according to his special interest or ability, is apt to find one or other of the functions the more important and dignified, or, even with the best will in the world he may succeed in one and fail in the other function Faculties should see to it that, in each department, the staff shall include both productive investigators and inspiring, well-balanced, well-trained teachers, even though to provide them may make necessary a multiplication of professors and assistants The student, also, in such a combined department runs, it is true, some risk Observing the prestige of research, and hearing an eminent teacher discuss enthusiastically some problem that he himself is attempting to solve, an ambitious student may attempt to undertake an extensive original investigation at the expense of his general education But these dangers to both staff and students can, if they are known, be easily avoided, and in any case, they are in my opinion far outweighed by the benefits of the system

It is a common saying, even of some of our most distinguished medical educators, that "the object of medical education is to make good doctors," and that "unless you can define a given course as bearing on that training, it has no place in the medical curriculum ", Now every one will probably admit that the principal function of a medical school is to train good practicing physicians and surgeons But I suspect that the overstatements which have been made on this point have been unconsciously defense-reactions against criticisms that the medical schools with higher standards are educating "professors" rather than "practitioners " Now, as a matter of fact, it is the duty of the medical school to make provision not only for the education of good doctors but also for the training of a certain number of men who shall not necessarily engage in practice but instead become occupied in teaching or investigating or both, either in the universities or in special institutes of research, for the teaching and investigating positions have to be ever refilled as they become vacant, and, besides, their total number is rapidly increasing Since a younger generation must be trained to succeed the older in the preclinical as well as in the clinical sciences, it is the duty of the medical faculty to make its teaching of young men such that at least some of them shall be attracted to careers other than that of medical practice Unless this is done, the medical sciences will languish, the students of the future will lack good teachers, and ultimately the doctors will be less good than they should be

Perhaps the most actively disputed point on the list I have mentioned is that of the immediate utilitarian value for the clinics of the preclinical teaching It has been matter of surprise to me to find that those who advocate teaching only the aspects of science that have a direct "bearing upon the future work of the medical man" are often professors of the preclinical medical sciences, and that opponents of this view are not uncommon in the clinics Thus in the well-known discussion in England, in 1908, in which a chemist (Armstrong), a physicist (Dawson Turner), two physiologists (Starling and Sherrington), and several clinicians (Osler, Semon, Buist and Wells) participated, opinion among the preclinical scientists favored the teaching of the preclinical branches with the student's clinical curriculum ever in view, whereas the plea for the broad treatment of the preclinical subjects without too much regard to their immediate applicability in the clinics was voiced mainly by the clinicians

In America, with the exception of some of the Canadian schools, the medical schools have insisted, and I believe with right, that the preliminary sciences of physics, chemistry and biology shall be taught in the departments of the general science faculty—not in the medical school Now, just as it is better for anatomy, physiology and pathology to receive students whose training has been of a general character in physics, chemistry and biology, rather than of the special character denoted by "medical physics," "medical chemistry" and "medical biology," so in my opinion it is far better for the clinics to receive students who, in the first two years of the medical school, have been given a general training in the simpler (preclinical) medical sciences rather than a special training in a strictly "clinical anatomy," a "clinical physiology" and a "clinical pathology " My reasons for this conviction may be summarized as follows

1 It is ultimately best for the student's clinical work if he come to the clinic with a good general grasp of each of the sciences ancillary to the sciences of diagnosis and therapy, and if he come familiar with the principles of each science as a whole and with the more typical of the technical methods of each science, irrespective of the immediate applicability of these principles and methods to diagnostic and therapeutic procedures The body of facts that he brings with him, while not to be despised or ignored, is far less important than the true understanding of the science, the grasp of principles, the training in technic, the scientific habit of mind as applied in each science, and the capacity to make applications of any part of the science to new problems

2 The problems of the preclinical medical sciences, while closely related to the problems of the clinical sciences, are by no means identical with them The professor in the preclinical subject may be expected to know how to investigate the problems and teach the subject-matter and methods of his own branch, he cannot be expected to turn aside from these activities to engage in the problems of the clinics, nor is it probable that he will know the applications of his science now being made, or those likely to be made, in the clinics

3 It is the business of the clinical sciences themselves to make the applications of the facts and methods of the sciences ancillary to them in the solution of their own problems What would we think of a professor of physiology who expected that the professors of physics and chemistry should send the students to the physiologic courses already instructed in the applications of physics and chemistry to physiologic problems? It is just as absurd for a professor of medicine or surgery to expect that students entering the clinics shall bring with them a knowledge of the applications of physiology, anatomy, physiologic chemistry, pharmacology, general pathology and bacteriology to the sciences of diagnosis and therapy It would be a great misfortune for the clinics and for the future of our doctors if the students spent

their time in the preclinical years in trying to acquire such knowledge For they would then miss what is most important for them to acquire and what is essential for the advance of the clinical sciences, namely, the general training in the principles and methods of each preclinical science and the comprehensive grasp that will permit of application in any direction, in other words, of unlimited orderly growth

4 The concern of the preclinical scientists regarding the applications in the clinic of the sciences they represent has, hitherto, been to a certain extent justified For the clinics have failed to make adequate provision for the application of the principles and methods of the preclinical sciences in the clinical work As a result, the preclinical scientists have felt that perhaps they should attempt themselves to teach the applications to medical students, or at any rate to teach only the facts of their sciences that they believe should be immediately applied This course, if followed, would, in my opinion, be disastrous for both the preclinical sciences and the clinics The remedy lies, I believe, rather in the radical reforms that have already been begun in the organization of the clinics and of the clinical teaching The wasted opportunities for the teaching and the advance of the clinical sciences at hospitals have hitherto been deplorable It is no longer sufficient to have merely wards and dispensaries with many patients for the teaching of diagnosis and therapy It has become essential that, attached thereto, there shall be a group of clinical institutes provided with laboratories, with libraries, with suitable equipment, and with a large group of not overburdened teachers, that in these institutes the clinical sciences of diagnosis and therapy may be cultivated in the same intensive way as the other natural sciences The main difference between one of the clinical institutes and one of the preclinical institutes will consist in the enormous extent of the field and the complexity of the problems of the clinic, the greater necessity for the division of labor and the multiplication of workers, and the necessity of providing in the clinical institute the men and the equipment necessary to insure that patients will be studied through application of the principles and methods of the whole series of preclinical sciences In these clinical institutes the students should be drilled in the methods of physical diagnosis, chemical diagnosis, biologic diagnosis, applied anatomy, applied physiology, applied pharmacology, applied physiologic chemistry, applied pathologic histology and applied experimental pathology and applied bacteriology This systematic training in the methods of the clinical sciences, though it should be conducted by the clinical teachers in the clinical institutes, should precede the clinical clerkships in the wards It is desirable that the clinical clerks shall be an integral part of the working staff of the university hospitals, and that their training in methods shall have been sufficient to permit them to be used as reliable instruments of investigation of the patients in the clinic The results of the examinations made by them may then, under adequate control, be incorporated in the regular clinical records of the hospital Students who have received a good training of a general character in the preclinical sciences may, in the clinical institutes, be speedily trained to accuracy in the methods now useful in the clinical sciences Students whose training in the ancillary sciences has from the beginning been special and with strictly utilitarian motives will be less likely to participate in making the new applications of science now constantly going on in the clinics, than students who have been bred in an atmosphere in which truth is sought for its own sake and irrespective of what the ultimate effect of its discovery may be

From what I have said, you will have already surmised the opinion that I hold regarding the last on the list of mooted questions, namely, whether the learning of a body of facts in each preclinical science, or a general education in its principles together with acquisition of some of the typical technical methods of the science, is the more important for the student as far as his clinical studies are concerned I have no hesitation whatever in saying that I regard both as important, though if I had to sacrifice one or the other, I should be more willing to give up the former than the latter Billroth, who had very sound ideas on medical education, once said that "the sum of the contents of memory at any given moment is no measure of the capacity of a man, we forget much, but if we have had practice in a certain kind of thinking, it, like the ability to swim, will never be lost as long as we retain the full use of our mental powers" From physics, chemistry and biology on, through anatomy, physiology and pathology, all the way to the clinical sciences of diagnosis and therapy, the transition, both as regards content on the one hand and principles and methods on the other, is so smooth and gradual that the student has not only gained a thorough training in observation but has really secured the best possible foundation for the science and art of medicine His growth is like that of a tree, and the tree is so well rooted that continuous growth may be expected for a long period Our best textbooks quickly grow old, but the man whose education in the preliminary and intermediate sciences has been sufficiently general and not too special will be able to follow every scientific advance during his lifetime, he will educationally have done his best to protect himself from a premature senility

After this discussion of principles, I may make a comment or two concerning readjustments of the curriculum that may now be needed Here there seem to be two principal divergences of opinion

1 Is the time now given to preparation in the preliminary natural sciences and to the simpler (preclinical) medical sciences in contrast with that given to the clinical sciences relatively too long or too short, and are the amounts of time assigned to any of the single preclinical sciences in contrast with that assigned to other sciences of this group disproportionately long or short?

2 Shall all the courses offered in the preclinical sciences be obligatory on every student, and shall they fill up his whole time, or shall the obligatory part of the curriculum be reduced to a minimum that will leave much (really) free time that may, at desire, be devoted either (*a*) to additional optional work in any or all of the subjects, or (*b*) to reading, reflection or recreation

I myself do not see how we may safely assign less than one premedical year to the three preliminary natural sciences, indeed, while one year is perhaps satisfactory for physics and biology, it is not enough for chemistry, which in my opinion needs at least two years in addition to the work in physiologic and pathologic chemistry given later in the medical school

As to the precise amounts of time to be devoted to the single preclinical medical sciences, I think they should vary somewhat with the degree of expansion that each science is manifesting at a given time When the emphasis of a period is on morphologic studies, the corresponding subjects may well receive more attention, when, on the other hand, activity is more manifest in studies of function, there may be a modification of the curriculum to some extent in favor of the subjects that deal with function A notable example of a wise dislocation in the curriculum is the lessened amount of time now given to materia medica since the necessity for a training in pharmacology has arisen

I am inclined to believe that we could make a real advance in medical education if we reduced to a large extent the amount of time given to obligatory courses in all the preclinical and clinical subjects, and largely increased the amount of time that can be given to optional courses, to reading in libraries, to conversation, to reflection and to recreation With good will on the part of the professors, with a better selection and organization of the general courses than is now prevalent, it would be possible, I believe, (1) to give an excellent general training in all the preclinical sciences, (2) to give opportunity for participation by each student in several optional courses on topics that particularly appeal to his interest, or that are especially suited to develop his talent, and (3) to leave some time, so sadly lacking now, for independent reading, for meditation, and for exercise in the open air—and this without extending the time now given to the preclinical work I am sure there must be something wrong, however, with a disposition of the time and activities of medical students that sometimes results in a morbidity of 10 per cent of a class from tuberculosis, even when on admission to the medical school, the members of the class have seemed, on physical examination, to be in good health

In a few words, then, when considering the relation of the preclinical laboratory courses to the work of the clinical years, we should in my opinion assent to the following principles

1 In each department, both teaching and original investigation should be represented

2 It is the duty of the teachers of each subject to arrange the courses so as to give the most desirable training to men who are later to be medical practitioners, while at the same time providing for the education of some men that will not go into practice

3 In developing the courses in the single preclinical sciences, regard for the direct utilitarian bearing of the subject on clinical work does not justify the teacher in neglecting the inculcation of the general principles of his science so that it may be understood as a harmonious whole, or the training in such technical methods as are necessary for the investigative work of the science for its own sake

4 Whereas it is desirable that the student shall, on entering the work of the clinical years, bring with him a certain store of facts accumulated during his preclinical studies, it is even more important that he shall enter the clinic with his mind educated to observe accurately, to experiment in order to increase the accuracy of its observations, to sift critically, to think independently, to arrange facts in logical sequence, and to desire to act rationally—in other words, with a mind habituated to the methods of science Finally, in making periodical readjustments of our curriculums, we shall need to vary the amount and kind of instruction in each clinical science in some degree according to the trend of the productiveness of the period, and we shall be wise, I believe, if we reduce the obligatory work in all subjects to the minimum consistent with an adequate general presentation of principles and technic, providing optional courses that may be taken by those that desire them, and leaving some time free for reading, for reflection and for open-air pleasures

PRINCIPLES AND EXPERIMENTS IN MEDICAL EDUCATION *

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James Russell Wallace once said in substance that the twentieth century added to human knowledge more than all its predecessors, but had done less than any other to make its knowledge available for human needs

As the mother of the sciences and the chief instrument for the subordination of physical evil, this charge was laid chiefly at the door of medicine It cannot be doubted that the charge was valid when Wallace made it, and probably today it remains virtually unanswered There is, however, an obvious reason for this situation The nineteenth century witnessed the gathering of practically all of the intimate and effective knowledge of physics and biology During the period of the accumulation of this vast knowledge, it could hardly be expected that its practical application could keep pace with the rapid growth in so many directions The great dilemma in medical activities today is the difficulty of maintaining a proper balance between the interests of pure science and research and the practical applications of medical knowledge

A hasty retrospect will reveal how rapid the progress and how broad the expansion of medicine has been Anatomy, the oldest of the medical sciences, entered the nineteenth century with considerable familiarity with the gross structure and even of the development of the human body, but histology and embryology experienced their modern growth in the latter half of this period Huxley conceived the germ layer theory in 1860, Killiger systematized histology in 1870, and nuclear fusion in fertilization was not discovered by the Hertwigs until 1880 Apparently the most accessible and clearly definable domain in medical research anatomy in the last few decades has enjoyed an extensive and most significant transformation in becoming comparative and experimental It has thus changed from a descriptive to an analytic science Today in the several departments of gross human and comparative anatomy, histology, embryology and experimental morphology it easily maintains its place as the backbone of medical science

Modern medicine is just about sixty-five years old It began in 1853 when Virchow formulated the doctrine of cellular pathology As late as 1833, Lobstein recast the ancient theory of the origin of cells from plastic lymph In 1831, Schleiden discovered the vegetable cell, in 1833, Robert Brown described the cell nucleus, in 1838, Schwann identified the structure of plant and animal tissues, but not until 1849 did

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Cruveilhier venture finally to deny all validity to the blastema theory of tissue origin

On the basis of cellular pathology, it became possible to formulate reasonably correct conceptions of what disease does in the body, and the vast additions to the knowledge of pathologic anatomy, and histology accumulated during the last sixty years, have gained for this subject universal recognition as the foundation stone of internal medicine More than any other of the medical sciences, it separates medicine from the medical cults

Guided by sound morphologic conceptions, physiology made rapid progress, beginning about the same period In 1856, Claude Bernard's memoirs on the functions of the pancreas marked the beginning of experimental physiology From a long line of famous contributors covering an ever widening field, we have today fairly accurate knowledge of the normal and disturbed functions of the body

Chemistry long applied in a crude way to the problems of medicine became direct in its objects and fruitful in its results when its tasks were clearly set by pathology and physiology Woehler connected the inorganic with the organic world by making urea synthetically in 1828 Liebig recognized the three classes of foodstuffs in 1846 Today the methods of organic and inorganic chemistry throw light on the intimate nature of physiologic processes, and this exact science has been of indispensable help in the development of pharmacology, bacteriology and general biology In fact, the conceptions of vital processes tend more and more to be formulated in terms of chemistry, inorganic, organic, physical and physiologic

Pasteur demolished the doctrine of spontaneous generation in 1861, and from his work dates the commencement of bacteriology and the germ theory of disease Modern surgery is also its direct descendent Through the methods of Robert Koch, we now know rather intimately the identity, life characters and mode of action of most of the bacterial causes of disease As a direct outgrowth of bacteriology, there came into existence the science of immunology, in which the therapeutic triumphs of Behring and Roux in diphtheria were the first fruits More recently, out of the study of immunity mechanisms has arisen the vigorous science of serology, which employs the methods of chemistry and physical chemistry over a wide range of problems, and has carried the elucidation of many phenomena of disease far more deeply than was possible or conceivable before its advent

The first pharmacologic laboratory was established by Buchheim in 1856 Pharmacology may be said to have inherited the most difficult of all the labors of modern science To cleanse the Augean stables of the accumulations of ancient medicines, to stem the ever increasing tide of empiric remedies, to wait on clinical medicine for its problems and on physiology and chemistry for its methods, have been some of the handicaps of this science, in spite of which its contributions form a sheet anchor for intelligent therapeutics

Internal medicine has always had its own problems, and many of them antedate the cellular pathology, but few of its products of earlier date have escaped transformation at the hands of the modern sciences

Clinical medicine has catalogued and superficially described the concrete problems of disease and turned them over for solution to the appropriate sciences It receives in return the burden of applying the new knowledge as it is gained, and it has been overwhelmed by the task It has had to resort to an elaborate subdivision of the field, and is now comprised of very numerous medical specialties covering different systems and organs, or even single diseases

Legal medicine it has definitely set apart, but legal medicine thus orphaned has taken good care of itself, and through Taylor, Tidy, Maschka, Hoffman and a long line of notable students it has come to form one of the most effective, as also the most exact, of the applied branches of medicine It is true that many American communities get along without any competent aid from modern forensic medicine, but only at the expense of public morality and safety

Preventive medicine may be said almost to have outgrown its parent and certainly to have oustripped it in significant accomplishments In effective form it is certainly a modern branch of applied medicine In infectious diseases it was made possible by bacteriology, and in other fields it grew out of physiology and chemistry, and it employs all these sciences and engineering and other departments of physical science as well It presents by far the broadest front of medicine, coming in contact with nearly all human interests and activities, and merging through the various departments of hygiene with criminology, sociology, political economy and the science of government Its relation to military science and the general problem of national preparedness deserves especial mention at this time

I am not attempting to sketch the history of medicine I am merely calling the roll of the present existing departments of medical knowledge with a hasty glance at each for identification, and I am doing it for the purpose of expressing a point of view which would seem to be the logical one for the recognition of the principles of medical education You may call it the laboratory point of view because it emphasizes certain subjects that are pursued chiefly in laboratories, but I prefer to call it the historical point of view

It puts the care of the sick in a prominent position, but yet in a just relation to those other branches of knowledge which have made it possible to care for them at all and which offer a hope that we may sometime care for them better

What has been the attitude of conservative medical educators during this period of sixty-five years? There is only one answer to this question They have considered paramount the interests of medical progress They have placed the highest value on all those influences which tend to support and develop the medical sciences This position also has been maintained unassailed up to very recent years During the period when the course of medical study occupied two or three years, 70 or 80 per cent of the time was devoted to the fundamentals of medicine Anatomy was by far the most prominent subject in the curriculum The student saw little or nothing of practical medicine In the last decade, with the addition of the fourth year, a systematic and comparatively successful effort has been made to enlarge the scope and improve the quality of clinical training, and some of the second, a large part of the third and nearly all of the fourth years are devoted to applied medicine and the actual practice of the medical calling The result has been most beneficial The student acquires as much or more theoretical knowledge than he had before, and he is able to apply that knowledge at the right time and in the right way at the bedside I judge that the present medical graduate is not open to the charge of Wallace that his particular knowledge is not available for practical needs On the contrary, the clever student is so well equipped for practice that his services are usually in demand from the moment of graduation He is by no means an experienced physician, he is not a competent surgeon, but he has delivered his half dozen obstetric cases, and in his hospital training he has watched the course, assisted in the diagnosis, applied the treatment, attended the necropsy, and listened to authoritative interpretations and discussions, in most of the common and many of the rare diseases that the general practitioner meets Of the 4,000 hours of his medical course, he has devoted on a calculated average over 2,000 to these attainments

This is genuine and effective clinical training, and its accomplishment has been the most conspicuous recent advance in medical education, at least in America I think that laboratory men everywhere have witnessed this change with satisfaction and offered their hearty congratulations to their clinical colleagues

Encouraged by the success of the new plan and impressed by the undoubted advantage of further extending the practical clinical training of medical students, it has been proposed to add to the required curriculum a fifth clinical year to be spent by the student as a junior intern in the service of an approved hospital

I have elsewhere pointed out some objections to this plan These objections seem to me serious and fundamental They are briefly as follows

1 It is a tactical mistake for university trustees to relinquish control of any essential part of medical education It is an illogical step and a dangerous precedent to encourage state legislatures to dictate to university faculties how they shall conduct medical education, and it is unfortunate that any political influence should have been introduced into this matter

2 It is an unsound educational principle to replace systematic instruction by members of a university faculty for training by hospital attending physicians with the routine material occurring in hospitals

3 The average hospital is quite unsuited for medical education Hospitals should first be standardized before students are by law forced into them

4 The introduction of a fifth purely clinical year raises an additional bar against the choice of a career in scientific medicine

5 The clinical year unbalances the curriculum by placing excessive emphasis on clinical training while subordinating the fundamental sciences and general medical knowledge It turns out practitioners instead of educated physicians

The aspect which the fifth year is beginning to take in some institutions of the highest grade meets some of these objections to its original form It seems to be generally agreed that the year may safely be spent only in a hospital controlled by a medical school In some notable cases the work of the year is systematically outlined and placed at least nominally under university officers This plan is quite different from that of turning the student over to the hospital as a junior intern

There are still further alterations in the plan of clinical training which virtually emasculate the scheme of pure clinical training Thus Leland Stanford University requires a year in a hospital or in some other work The qualifications of the hospital are specified, but the "other work" is not described, except that the student must write a thesis The University of Chicago prescribes the conditions of the clinical work, and offers an option of research in any department of the medical school Both of these plans relieve the harshness of the order that the student must enter a hospital if he wants to practice medicine

On the other hand, the law of Pennsylvania, and that recently passed in New Jersey, flatly state that a year of service in a general hospital is required for the licensure to practice medicine

Thus in regard to the very important matter of clinical training and the licensure to practice, there are at least three different conditions existing in prominent medical centers in this country In the *majority* of eastern states the licensure to practice is granted on the recommendation of the medical school after four years of systematic training prescribed by the school In some states the schools prescribe a fifth year either in a hospital under university auspices or in any approved advanced study In a few states the student is required to enter a general hospital and serve as a junior intern

The last scheme I can only regard as an injudicious experiment in medical education For the sake of raising the average dexterity of the lowest grade of student, it ignores the claims of broad general education as a whole It commits the state to the training of practitioners instead of the education of physicians I am well aware of the gross incompetency of a large body of medical students in many sections of the country to practice medicine For these the hospital year will be an advantage It will not be wasted on any student, but it is a measure designed to deal with the lower strata of student society, and it is not the best available method of securing the desired results It is open to all the objections which have been enumerated above It will turn out smart young doctors well acquainted with the present vogue of endless clinical tests and methods they imperfectly understand, rather successful in practice, but, if possessed of intellectual honesty and personal ambition, ready to return to their alma mater after four or five years and beg the privilege of "brushing up" They are doing it now by hundreds, until the postgraduate instructors often outnumber the undergraduate students

Fortunately there are indications that this scheme will not be adopted by many other states in which a reasonable circumspection precedes action in matters of such great importance

The second plan of introducing a fifth year of advanced study in clinical or other fields is quite a different matter, and contains the elements of progress in the right direction It may be assumed that five years of medical study are needed today for the education of physicians This period has long been required in Europe, and its need has long been recognized in America But when the fifth year is adopted, great care should be used in its disposal From the historical point of view of the larger interests of medicine, I would venture to suggest certain considerations which may safely govern the disposition of this valuable time

In the first place, it may well be asked if the fifth year may not permit the readjustment of the crowded curriculum of the first two years Into this brief period has been forced nearly all the theoretical training in the underlying medical sciences, as well as preliminary clinical work, so that few instructors feel satisfied that students now secure a real knowledge of these subjects. Speaking for pathology, I can say that the best present courses in this subject are on the whole elementary and abbreviated. Medical students do not adequately learn what disease does in the body. In most courses in pathology some important diseases are not even mentioned.

I am one of those who believe that a surgeon should know the natural history of the different forms of epidermoid cancer before he learns how to cut the cancers out, and that the physician should know the theories of the pathogenesis of rickets before he treats and advises such patients. The same standards of value apply to the instruction in other basic branches of pure and applied medical science. They need more time.

There are also several branches of science which are of great importance in modern practical medicine, are now presented imperfectly or not at all, and which may well receive due attention in a remodeled curriculum. Of these may be mentioned physical chemistry, medical physics, immunology, serology and chemical pathology. Such changes would meet some of the demands of the newer branches of knowledge on which the progress of medicine chiefly depends and with which the educated physician should be reasonably familiar.

In the latter half of the curriculum some specialization may be permitted toward the career the student may choose, but a broad education requires a thorough grounding in the principles of the theory and practice of medicine and surgery. Laboratory men are too often unfamiliar with the interests and problems of medicine, and their usefulness in medical faculties and in research is thereby curtailed. On the other hand, practitioners are hurried into practical exercises with a smattering of theoretical knowledge which they imperfectly apply ever afterward. The only comment I venture to make regarding present methods of undergraduate clinical training is to suggest that clinical clerkships are difficult to manage in a systematic course of instruction, and that there is danger of anticipating the work a hospital intern does under more favorable conditions. The main problem is the disposition of the fifth year, especially for that great majority which elects to practice medicine. In conversation with many colleagues I find a widespread feeling that this year should be made a year of university instruction and not a year of service in a hospital. Unless agreement on this principle can be reached, the fifth year becomes a matter of quite secondary interest to the medical educator. To follow a hospital attending physician about the wards and see what he does in his daily routine may enable the student to pick up many practical points, but it is not medical education. Nor will it suffice to exact a promise that the attending physicians will undertake the duty of giving adequate instruction to the interns. The attending physician is a busy man, and the best of his disquisitions on rounds are inferior to a systematic discussion prepared for the particular purpose of instructing advanced students.

The student can do much better by spending a year with carefully prepared clinical courses given by expert teachers in European hospitals, as many of our students have done. We must do at least as well as they if we are to hold our students and develop effective advanced clinical instruction. A corps of competent university instructors of the type of privat docents is needed to conduct this work. It should be one of their chief occupations, and an essential preliminary to their advancement to more prominent positions in the medical faculty. It has often been said that the training of students is much easier than the development of a faculty.

Should the work of the fifth year be conducted in a hospital? Certainly access to patients is necessary, and the observation of all the phenomena of disease that can be obtained will be of great value. Yet I believe the time thus spent should be limited and not devoted to routine history taking, colored photography, blood and urine examinations, and the keeping of records. The student should not be made a hospital servant, but should spend his time in the hospital in the presence of clinical material, in seminars on specific topics, prepared for him by his instructors. The hospital laboratory may develop his technical competency to a certain extent, and acquaint him with the principles, sources of error, and necessary limitations of laboratory diagnostic tests. He will then escape that implicit confidence which the average practitioner places in these mechanical methods of diagnosis.

The hospital morgue can offer him brief and significant insight into the effects of disease and the pathogenesis of symptoms. At the necropsy table he will learn some of the deficiencies of medical diagnosis and surgical procedure, and he will not grow up with personal conceit or a fancy for hero worship.

Rather than remain in a single hospital, the student should enjoy brief terms of instruction in several institutions, where he may obtain first hand knowledge of special fields, as pediatrics, contagious diseases, tuberculosis, cancer and insanity. Periods of three or four weeks spent in five or six such hospitals would give the general practitioner some real knowledge of the diseases which are chiefly to occupy him in practice, and which he cannot get by continuous residence in a single general hospital. The prospective surgeon might well replace the present initiation on the human patient by learning surgical technic on lower animals. His particular needs could be met by devoting special attention to the various subdepartments of surgery. To what extent specialization should be permitted in the fifth year I am not prepared to say, but think that in general we are inclined to exercise too minute supervision over the natural tendencies of well trained students.

So much opportunity for effective clinical training lies in these directions that it is difficult to find any defense of the scheme of turning the student over to the service of a hospital as junior intern.

I am a firm believer in the value of a comprehensive knowledge of disease, descriptive and theoretical, as obtained from medical literature, and I think the advanced student should spend all his evenings in the library. He should be required to search the literature for observations and interpretations of what he sees in the wards, and should report his results in good English. American medical literature is rapidly improving in quality and scope, but it will not reach its proper development until the better class of students are trained to activity in this field, and to develop a critical knowledge of good literature. It is said that by far the largest circulation among medical periodicals in this country with one exception is enjoyed by certain semimedical journals whose standards of accuracy and possibly of ethics are questionable Yet it is a principle of journalism not to create but to cater to the current tastes Who is responsible for the taste for such literature It is certainly the medical schools and possibly not always those of the lower class

The production of an original thesis is included in all schemes of advanced clinical instruction It should be made a genuine test of the student's ability in clinical observation and laboratory procedure, of his knowledge of literature, and of his ability to solve a problem, and should occupy quite as much of his time as his attendance in the hospital It is hardly necessary to expand the point that unless the student has had some experience in solving a problem he will stand resourceless before the numerous clinical problems that confront him in practice The young practitioner may be so fortunate as to have seen as a student just the same peculiar condition that confronts him in his first patient Far more often he will have to depend on his general knowledge of disease, of medical sciences and how to apply them, and on his previous training in the solution of problems

Finally, the fifth year may well give opportunity for the introduction of substantial courses in preventive medicine, hygiene, history of medicine, forensic medicine, and other fields in which medical knowledge comes into touch with the needs of modern society

There is nothing new in the plan thus roughly outlined It embodies the suggestions that have long been discussed and approved in many circles and have taken form as the needs in particular fields have become more concrete It is based on the principle of the comprehensive education of physicians It aims to provide the student with an effective body of practical information, with a genuine knowledge of the central medical sciences and with some competence in and sympathy for all branches of medical activity It is not an intensely practical scheme On the contrary, it frankly emphasizes theoretical scholarship A natural deficiency of common sense it will not make good, and the mature judgment of the old practitioner will still be the reward of experience Yet very few men will pass through five such years unfit to practice medicine

I very much doubt if any body of practitioners with such theoretical training would fall into the blunder recently witnessed in one of our states of requiring by law a negative Wassermann test as a condition of marriage Here is an excellent example of the difference between an educated physician and the practically overtrained man who falls a ready victim to medical absurdities

An ideal surgeon was Frank Hartley, who could tell every pathologic condition occurring from the skin to the bone marrow in any part of the body He knew these conditions in the literature and he knew them in the flesh He was a scholarly surgical pathologist, like Billroth, and at the same time a master of surgical technic, while directing his operative ambitions chiefly to the mucous membranes

An ideal physician was Francis Delafield, who first learned pathologic anatomy and learned it thoroughly by years of observation at the necropsy table, who interpreted his findings by a superb histologic technic, read clinical symptoms in terms of structural lesions, left his mark on the principles of general and the applications of special pathology, and then went out into practice and developed a systematized encyclopedic knowledge of the natural history of disease

These men were exponents of a broadly conceived and faithfully executed educational plan, and they were some of its products

We cannot do more and must not do less than bend our students in these directions, which are in accord with the best tendencies of the profession

The historical development of medicine emphasizes the responsibility of medical education of today for the medical progress of tomorrow On the roll-call of the present existing departments of medical knowledge, all must find a place

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A PROPOSED UNDERGRADUATE COURSE IN CLINICAL PHYSIOLOGY*

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It must, I think, be conceded that the average general practitioner of medicine knows far too little of the science of physiology, and has not the habit of looking at his patients from the physiologic point of view He sees the normal man or woman hardly more than does the layman The bodily condition that is before him in his professional life is a derangement, and it is the derangement that he has been taught to focus his interest on When, too, he thinks of a deranged organ, it is the anatomic picture of it that is foremost in his mind, and not the deranged function But his problem is really one of dynamics, not of statics, and the thought that should always be paramount, I contend, is that he is dealing with a derangement of a physiologic mechanism—a machine of inconceivable complexity has got out of order and it is his business to locate and determine the nature of the trouble and set the machine right His problem all through is one that, when properly attacked, requires a keen knowledge of what the machine is capable of doing when in good order Yet it is surprising to realize how little in detail the average general practitioner knows of this, and how little he analyzes his pathologic problems from the physiologic standpoint

If this be conceded, how can it be remedied? Not, I think, by a change in existing courses in physiology One of the obvious prominent features of the improvement that has taken place in medical education in the last quarter of a century is the reform in the teaching of physiology, and yet with all the professional physiologists, the physiologic laboratories and the required courses of practical work therein, the physiologic millennium, to which some of the most sanguine of us looked forward a quarter of a century ago, that state when the physiologic point of view will be paramount among clinicians has not yet come Undoubtedly existing courses in physiology are capable of improvement From the large mass of material constituting the science, a better selection of topics to be considered by the instructor and of experiments to be performed by the students may often be made While maintaining its firm and necessary basis on the principles of physics and chemistry, the subject-matter can often be made less esoteric, the bearings of a knowledge of the normal on an understanding of perturbed bodily processes can be emphasized, without the instructor's running the lamentable risk of giving a course in a narrow "medical" physiology. Yet improvement in existing courses cannot, I think, fundamentally improve the present situation, which is this: During either their first or their second year, or partly in one and partly in the other, the students receive their instruction in physiology. Most of them follow the course willingly because they have faith—faith in the wisdom of the men who have planned the course, and faith that in some way not now clearly comprehended, their training in it will be useful to them later. Nevertheless, too many students question the good judgment that imposes on them a difficult topic, the relation of which to the treatment of sick persons they do not understand. By the end of their second year they have completed their work in physiology, and lay the subject aside with a feeling of relief as they turn to the more congenial occupations of their two clinical years. Now they acquire a new vocabulary for which they have all the time been longing. Such terms as "sino-auricular node," "synapse," "refractory period," "amino-acid," "hormone," "action current," "vasomotor control" do not sound to them half so professional or thrilling as "arteriosclerosis," "pleural effusion," "uremic convulsions," "mitral stenosis," "syndrome," "cholecystitis" and "gastro-enterostomy." With the passing of the physiologic words go also their meanings, and throughout the rest of the school career, and too often the rest of professional life, physiology is merely a scientific curiosity. Many practitioners, on the other hand, come later to realize and to lament their lack of physiologic knowledge and to appreciate its illuminating point of view. This fact is indicated to me, not only by much professional testimony, but also by the success of such lecture courses as that of the Harvey Society of New York.

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* Read in a symposium on the 'Relation of the Laboratory Courses to the Work of the Clinical Years,' at the Twelfth Annual Conference of the Council on Medical Education of the American Medical Association Chicago Feb 7 1916 abstract of discussion Society Proceedings The Journal A M A., Feb 19 1916 p 596

The abrupt termination of the prospective doctor's physiologic career at the end of his second year of study might be avoided if the clinical instructors of the two subsequent years were to see clearly the value of the physiologic point of view and keep it ever before their pupils. Here, too, there has been improvement in recent years, but progress is slow. I have, therefore, come gradually to the conclusion that for the present at least it is by the improvement neither of existing courses in physiology nor of existing courses in clinical medicine that the desired change in the attitude of practitioners can be brought about.

With the object of giving practitioners some opportunity to supplement their lack of school training, we established five years ago at the Columbia school of medicine a postgraduate course which we called "clinical physiology," and which consisted of informal lectures and demonstrations on the application of physiologic facts and principles and methods to problems in clinical medicine. Some of the topics considered in this course are as follows: the respiratory organs in normal and pathologic activity; the factors regulating blood pressure; blood pressure in man in its normal and pathologic relations; the physical features of the capillary blood flow and the early stages of hyperemia and inflammation; various cardiac lesions, their production and physical effects; the consideration of volumetric changes in the output of the heart as affected by various factors, together with an oncometer study of the kidney during these changes; renal secretion as affected by circulatory changes and the chemical conditions of the blood; the respiratory and vasomotor effects of abnormal intracranial pressure; the viscosity of the blood and its clinical relations; lymph, its normal flow and its relation to edema; the blood supply of the abdominal organs and their vasomotor reactions; the vasomotor reactions in their relation to shock; the general phenomena of spinal shock; the sounds of the heart and methods of recording them, and the action of the heart as studied by the electrocardiographic method.

We had hoped to attract to this course young medical graduates just out of their hospitals who, having had some clinical experience, might be glad, while waiting for patients, to return to the laboratory and broaden their knowledge of the physiologic relations of their clinical problems. Such young men, however, were conspicuous by their absence, and those who came to us were practitioners of ten, fifteen and twenty years' experience, men whose familiarity with clinical conditions had made them realize keenly how much an understanding of physiology would help them in their daily work. Each year since its establishment, from twelve to twenty such men have attended our course.

We believe, however, that a clinical experience of ten, fifteen or twenty years is not necessary to enforce this realization. We still believe that we can make an impression on the younger men. We recognize that it will be idle to attempt this during the first two years of medical study—some knowledge of clinical medicine is necessary. We are, therefore, now proposing that a course similar to our existing postgraduate course in clinical physiology be established for undergraduates. This should be given as late in the undergraduate period as is possible—either during the second half of the fourth year, or in the fifth year, if as now seems probable in Columbia, such a year shall be added to the curriculum. The chief instructor should be a professional physiologist who has had adequate clinical experience, and it is hoped that he would be a member of the regular staff of the university hospital, coequal with its chief physician, its chief surgeon and its chief pathologist. The various topics should be presented by means of informal lectures with demonstrations or, still better, by means of laboratory work by the students themselves. So far as it is possible, the subjects should be illustrated by experiments on animals, in which the various necessary lesions are produced, and also by the exhibition of human patients representing identical or allied conditions. The clear picture of the normal functional condition should always be kept before the student, the deviation from the normal should be depicted, and the methods should be shown that may be used in bringing about either a return to the normal or, if the lesion be incurable, a continuing tolerance toward it.

With such a program it is easy to jump to the conclusion that we are offering simply a course in experimental pathology, but this is not so. The pathologist is interested in a perturbation of function *per se*—to *him* the perturbation is the important phenomenon. To the physiologist it is only an incident in the patient's life, a change in a still more important phenomenon, which is the physiologic condition. The latter is the thing to keep always in mind. It is what the patient has possessed before the perturbation began, and it is what he must regain. Our proposed undergraduate course aims to raise to its proper plane the conception of the normal, and to train the young doctor to look on it as the end for which he must strive.

In planning the course we at first thought that the men who would be most benefited by it are those who follow internal medicine, who are constantly brought face to face with functional problems. But in discussing our program with practitioners we have been impressed by the attitude toward it of the surgeons, especially the younger surgeons, who realize clearly that the modern surgeon, quite as much as the physician, needs the physiologic point of view, and who welcome any aid that will induce the prospective surgeon to see this more vividly. Moreover, if, as seems to be occurring, the field of preventive medicine is to be extended to include other than infectious diseases, and the medical practitioner of the future is to become more and more a hygienist, still more than at present must he possess an adequate knowledge of the physiologic state and ways to maintain it. Such a course as we propose not only would help thus to make better practitioners, but also would react, we think, on clinical teaching and assist in placing this more firmly on a physiologic basis.

We who have already come to realize the benefits that have been derived by practitioners from our existing course in clinical physiology thus believe firmly that in the present state of medical education it is only through some such medium that proper recognition will be given to the fact, which is emphasized not only by the physiologists but also by some of the keenest of clinicians, that an intimate acquaintance with physiology offers one of the most efficient preparations for successful medical practice.

OVERACTIVITY AS A POTENT FACTOR IN THE ETIOLOGY OF SOME NERVOUS DISEASES

INQUIRY OF 187 CASES

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Several years ago, having had an opportunity to observe a large series of individuals working in lead, a problem presented itself for solution. Some workers showed left handed wrist-drop, others right handed, another had a paretic condition of the long flexor of the right thumb, another had a double wrist drop, another had paresis of the right leg. In all these cases there was an absolutely identical etiologic factor, and still the functional disability did not manifest itself in the same portions of the body. In several professional pianists I have observed attacks of cramp-like sensations in the wrist, and in others in some of the fingers. The occupation and the continuous efforts being the same, the seats of the disorder are not identical.

In a large group of tabetic patients I had three cases of the cervical type in which ataxia began in the upper extremities. Why, therefore, is the functional disorder more marked in the arms than in the lower extremities when the specific infection is of a general character? In some of my tabetic patients the eye symptoms were conspicuous from the beginning. In others the leg symptoms were the first to appear and the eye disturbances appeared quite late in the course of the tabes. In some of my cases the involvement of the sphincters was a late manifestation, in others a very early one. These differences in the onset and localization of functional disability in various persons suffering from tabes dorsalis are striking and require an etiologic explanation, especially in view of the same syphilitic toxic agent in all cases of tabes.

Why is it that paresis is most frequent in persons who exercise their intellectual more than their physical functions? I had four patients with juvenile paresis in whom the symptoms made their appearance with their entrance into college, otherwise speaking, at the time of greater demands on intellectual efforts. What explanation can one find with regard to such an onset?

In a group of cases of progressive muscular atrophy of spinal origin, the affection began in the upper extremities in some patients, in the lower in others, in one limb in some cases and simultaneously in two symmetrical limbs in others.

The largest majority of my poliomyelitic cases were in children, in whom the affection was confined to the lower part of the body. In five adults the functional disability was observed in the one or both upper extremities. Three of these individuals were tailors and two were bricklayers. What is the reason of the difference in the localization of the pathologic process in the children and adults?

In three cases of pernicious anemia in men there were evidences of a degenerative state of the spinal cord. In one case of the same affection in a middle-aged woman the central nervous system was not in the least involved. If a toxin is supposed to be the cause of the pathologic process of the cord wherein lies the difference in the cases of the men and of the woman?

These few examples of my entire series, the details of which will be given later, are sufficient to demonstrate the *raison d'être* of my inquiry. Weigert and Roux long ago expressed the view "that normally there is a state of equilibrium among all cells of the body, and their interrelation is such that when one cell becomes diseased or otherwise disturbed, the energy of the cells which lie close to it develop an increased energy, namely proliferation and, per se, repress the affected cell still further. Weigert also calls attention to the fact that the process of functioning of a tissue is accomplished by its destruction, which in normal conditions is rapidly compensated by a proper supply of nutrition. But if the latter is not forthcoming the above mentioned equilibrium is disturbed and degeneration takes place. Edinger[1] went further and said that if, instead of, or with, a defective nutritive supply there is an excessive funtionating of a cell, the increased growth of the neighboring cells will lead to a degeneration of that overactive cell, which naturally is then less resistant. This is particularly seen when both elements are at work, namely, overactivity and nutritional deficiency.

Edinger succeeded in demonstrating by some experiments the rationality of his contention. By administering pyrodin to rats he produced in them a marked anemic condition resembling pernicious anemia of human beings. When this was accomplished, by certain contrivances, he made them perform a considerable muscular activity. The result was that all anemic rats showed at necropsy a degenerative state of the spinal cord. The control animals which after the injections one policeman and in one watchman, in two Italian street cleaners in one upper limb The remaining eleven cases showed an onset in both hands The latter patients were all either laborers or tradesmen The occurrence of the disorder in the lower limbs of the policeman and watchman speaks strongly in favor of the view in my thesis

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[1] Edinger: Samml. klin. Vortr., 1894, No. 106.

Pernicious Anemia—There were four cases of pernicious anemia in my series In the men, three in number, evidences of degeneration of the spinal cord were present They presented symptoms of ataxic paraplegia, with diminished or absent knee jerks Two of them were laborers and one a collector for an installment house The fourth patient, a woman, housewife, presented no disturbances of locomotion and the knee jerks were normal Here again we have a corresponding link between the degree of overactivity of certain portions of the body and an organic lesion of that part of the nervous system which controls the affected portions

Paresis — Out of thirty-nine paretics twenty belonged to the class of individuals who lead a purely intellectual life Teachers presented the majority In them the mental symptoms were the most conspicuous With the exception of the eyes, other physical symptoms were very slight, namely, tremor of hands, slightly increased knee jerks and no toe phenomenon Nineteen patients were tradesmen in whom the physical as well as mental symptoms were equally developed They presented a condition called "tabo-paresis," namely, symptoms of tabes, together with mental disturbances found in general paralysis of the insane If we consider the combination of physical and mental efforts displayed in the occupation of tradesmen, we must admit that the above observation as to the morbid manifestations in these individuals is of no little interest and is more than a mere coincidence Four patients of the entire group had juvenile paresis Their ages ranged from 16 to 20 The mental manifestations made their appearance at the time of their entrance into college It is a period of intellectual life when application and mental efforts are tested at their utmost It is also highly interesting to notice the variability of the eye condition in the paretics Among the tradesmen there were two jewelers and three bookkeepers It is remarkable that in every one of these men optic atrophy and Argyll Robertson pupils were very striking and developed early in the disease In the persons who led a purely intellectual life there were twelve teachers All presented pupillary symptoms and some also palsies of the third nerve Five cashiers of banks showed besides third nerve palsies also evidences of eye-ground changes The inference is consequently the same as in the cases of tradesmen from the standpoint of the principle of "exhaustion"

Tabes—In considering the group of cases of tabes, 47 in number, the inquiry was made as to the character of occupation and the degree of exertion of the tabetics The largest majority (thirty-nine) were individuals who did a great deal of standing or walking and carrying heavy weights In this group there were letter carriers, policemen, messengers, icemen, laborers and motormen of street cars The lower extremities alone were at first involved and the tabetic process began with disturbances of locomotion Out of the remaining eight patients, three presented at first ataxia of the upper extremities and diminution of knee jerks, so that the diagnosis of cerebellar disease was originally entertained Two of these patients were stenographers and the third, a woman, worked at a laundry The stenographers' duties were particularly laborious and their hours were very long They eventually developed leg symptoms

In connection with the subject of tabetic ataxia in the extremities, it is well to recall what was said on the introductory pages with regard to the sensory neurons The continuous and uninterrupted flow of impressions received by our peripheral sensory apparatus is the most important factor in all muscular contractions and in the display of our joints Should the organism be invaded by a poison, such as syphilitic in tabes, the overfunctioning tissues or organs naturally will suffer first Hence the disorder of locomotion and coordination, which so much depend on the function of the sensory neurons

Proceeding further with the analysis of tabetic manifestations with reference to the principle of "exhaustion," the following is observed Three patients who led a sedentary life worked in poorly lighted rooms; two of them, clerks in the same establishment, were assigned offices with windows opening in a very narrow and small yard, so that often they had to use gas light The third had to use gas light all day He was cashier in a small store and his desk was in the back part of the store All three when first seen presented optic atrophy without ataxia, but with much diminished knee jerks Two patients were electricians working in very brightly illuminated rooms and glaring light for ten hours daily They also presented optic atrophy as an early tabetic manifestation At the International Congress of Medicine held in 1913 the effect of very bright light was considered as injurious to the eye, owing probably to the presence of ultraviolet rays The early occurrence of optic atrophy in the two electricians is undoubtedly due to this latter circumstance

Thirty-two patients of my entire tabetic series presented ptosis in one or in both eyes and Argyll Robertson pupil in one or both eyes If we consider the extraordinary activity and the incessant display of the light reflex from the moment we awake in the morning until we close our eyes for sleep — if, moreover, we consider the activity of the levator palpebrae which keeps the eye open — we cannot be surprised at the fatigue of these overactive functions in a body which is under the chronic influence of syphilitic toxemia, and the early and frequent occurrence of Argyll Robertson pupil and ptosis in cases of tabes is to be expected

CONCLUSIONS

The present study, while it does not explain every morbid manifestation, nevertheless is sufficiently suggestive as to the effect of overfunction of organs on their early morbidity It teaches that a body which is potentially diseased, or which is under the influence of a disordered metabolism through the presence of a toxic material, will develop morbid phenomena primarily in parts functionally exhausted The "exhaustion view," as we have seen, is demonstrated quite satisfactorily in syphilitic affections of the nervous system, in alcoholism, in plumbism, in acute infectious diseases such as anterior poliomyelitis, in profound anemias and in other conditions accompanied by profound metabolic disturbances of any nature It explains the constant and almost uniform and earliest involvement of those portions of the body that are kept in a state of fatigue

This observation points to a very important feature in the domain of prophylaxy Bearing in mind the pathologic potentiality in cases of chronic toxemias, early treatment of the latter, combined with removal from the usual occupation at the earliest possible moment, is apt to prevent localized morbid manifestations such as we have seen above with regard to locomotion and eye manifestations in tabes, or localized palsies in intoxications, for example A potential syphilitic individual will thus be able to avert for a long period of time the early oncoming of morbid manifestations of syphilitic or parasyphilitic character in the domain of the nervous system The principle of prevention is here strikingly evident The recognition and adoption of the view of "exhaustion" in affections of functional and organic nervous diseases appears to be far reaching

1812 Spruce Street

CORPUS LUTEUM EXTRACT IN THE NAUSEA OF PREGNANCY

PRELIMINARY REPORT

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My use of corpus luteum extract in the nausea of pregnancy is based on the presumption that there is more than a coincidence between the formation and disappearance of the corpus luteum of pregnancy and the cessation of the nausea None of the theories based on the causative factor of fetal or syncytial toxins have worked well enough to encourage the hope that in them lies the solution of the problem It is not unreasonable to suppose that there is sufficient absorption from the corpus luteum of pregnancy to account for the disappearance of the nausea, especially when one realizes that the nausea begins to diminish at the time the corpus luteum has reached its acme of development

Acting on this idea, I have been administering, hypodermically, corpus luteum extract in doses of 1 c c (20 mg) daily This dose is in all probability too small, and will have to be increased materially, but this is a matter for investigation and will be fully dealt with in a subsequent and fuller report The object of the present report is to call attention to the possibilities of the theory, in the hope that sufficient practical work will be done to determine whether or not it is of value

So far, my experience with it has been encouraging Five patients have been given the extract hypodermically and always intramuscularly, with the following results

Case 1—Mrs L., aged 27, in her third pregnancy, had severe nausea in this as in previous pregnancies She was eight and one-half weeks pregnant, and was given four doses in all She reported great relief after the first dose, and no nausea at all after the fourth This in all probability was a neurotic vomiting, and as such is not a fair test. It should be discounted accordingly I cannot believe that such rapid effect could result in the ordinary nausea of pregnancy

Case 2—Mrs R, aged 38, in the seventh week of her fourth pregnancy, had excessive nausea In her three previous pregnancies, the nausea did not cease till after the fifth month She had now had nausea for ten days After nine doses the nausea was so relieved, though not entirely gone, that the patient described it as negligible and the treatment was stopped that further effects might be watched The last dose was given two weeks ago, and there has not been any severe increase, though the patient is still slightly nauseated, but comfortable

Case 3—Mrs H, aged 24, had three pregnancies, all within three and one-half years The patient was now twelve weeks pregnant, and the nausea was diminishing but still marked She received eight doses in all and described herself as comfortable, with only occasional twinges of nausea The last dose was given three weeks ago (the patient being now fifteen weeks pregnant), and there has been no return

Case 4—Mrs S, aged 24, nine weeks pregnant, in her first pregnancy, had nausea for one week severe enough to confine her to bed She received four doses and was worse than ever This case was a total failure The patient has a large goiter, and possibly this is a factor in her case. Her nausea was controlled by lavage and large doses of bromid, but the corpus luteum showed absolutely no effect

Case 5—Mrs D., aged 30, now in her third pregnancy, had a hydatid mole removed in her first pregnancy at what would have been full term In her second pregnancy, eighteen months later, another hydatid mole was removed at ten weeks There was severe bleeding In both these pregnancies the patient was excessively nauseated throughout, except for the last two months of the first one She was now nine weeks pregnant, and had nausea severe enough to confine her to bed She has so far received eighteen doses hypodermically For ten doses she alternated between comfort and discomfort Since the tenth dose she has had no nausea at all, and as yet no signs of degeneration of the ovum Treatment is being continued on account of the possibility that it may have some effect in preventing a third hydatid mole For more than a week it has been unnecessary, as far as the nausea is concerned

These results (80 per cent successful), in a very small number of cases, encourage me to persist until I can report a larger series The one failure shows that it cannot always be depended on, but so far the results have been better than any other routine form of treatment, and in all probability, with increased doses, the method can be shown to have decided value

1823 Pine Street

DIPHTHERIA CARRIERS

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THE NECESSITY OF TAKING NOSE CULTURES IN THE DETECTION OF DIPHTHERIA CARRIERS

During the month of October, 1915, cases of diphtheria occurred in six different schools in widely separated communities of California Among the measures used to control the disease was the taking of cultures from all contacts and the subsequent isolation of all carriers The proportion of infected to the noninfected contacts in such outbreaks of diphtheria has been subject to great variation, and while the uniform taking of nose cultures with those from the throat will not appreciably reduce this variation, it will reduce to a minimum the missing of carriers A study of the comparative statistics in this article, in which the personal equation has been eliminated by three persons making the examinations with checking of results, and only typical granular type of diphtheria bacilli being considered positive, proves absolutely that if we are to control epidemics of diphtheria by the isolation of carriers, nose cultures must always be taken with those from the throat

The tables indicate the importance of taking cultures from both nose and throat in such investigations It will be noticed that Investigations E and F, in which cultures were taken only from the throat, the percentages of positives are markedly lower than those of the investigations in which cultures were obtained from both nose and throat The importance of nose cultures is conclusively demonstrated in the percentage average of positives, as nose cultures gave 42 2, compared with the percentage average of throat cultures, 7 9

Inasmuch as only 28 per cent of all positive cultures in these investigations were from the throat, one can readily see how many positives, 72 per cent, would not have been detected if nose cultures were not taken

TABLE 1—RESULTS OF CULTURES IN SCHOOL INVESTIGATIONS FOR DIPHTHERIA

Investigation	Total	Total Positive	Positive Nose	Positive Throat	Positive Nose and Negative Throat	Negative Nose and Positive Throat	Positive Nose and Positive Throat
A	132	28	25	10	18	3	7
B	65	24	21	8	16	3	5
C	17	15	14	1	14	1	0
D	55	22	18	6	16	4	2
E	101	6		6			
F	97	5		5			

TABLE 2—TABLE OF PERCENTAGES OF INVESTIGATIONS IN TABLE 1*

Investigation	Percentage of Positives	Percentage of Positive Throat	Percentage of Positive Nose
A	21 2	7 6	18 9
B	36 9	12.3	82 3
C	88 2	5.8	82.3
D	40 0	10 9	34 0
E	5 9	5 9	
F	5 0	5 0	
Average total percentages	32 8	7 9	42 2

* Of all positives 87 6 per cent. were found in cultures from nose, 28 per cent of all positives were found in cultures from throat.

Another interesting observation is the total percentage average of positives, 32 8, the majority of which can be classed as diphtheria carriers This large percentage is undoubtedly due to the fact that probably all the persons examined were recent contacts with diphtheria cases, as cases were present in the school examined

THE USE OF THE SCHICK TEST IN DISTINGUISHING CONTACTS FROM CARRIERS

A point of great interest, in view of the rules of the California State Board of Health relative to contacts and carriers, was brought out in Group C of the preceding investigation This group was composed of young adult students in a large university In order to distinguish between the contacts and carriers, without waiting for the elapsing of the incubation period, it was decided to make use of the Schick test With this test it was proved in forty-eight hours that the whole group was immune The members of the group were accordingly classed as carriers, and so relieved of some of the inconveniences attending the quarantine of contacts The results of the test were borne out by the fact that none of the carriers developed the disease Another example of the value of the Schick test was shown in another investigation in which several carriers developed diphtheria, and in which the test was not used Had the carriers in this group been given the Schick test as those in Group C, the nonimmunes would have been detected and could have been immunized before the development of the disease

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CULTURAL EXPERIMENTS WITH THE SPIROCHAETA PALLIDA DERIVED FROM THE PARETIC BRAIN

UDO J WILE, A B, M D
AND
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Recently,[1] one of us described the successful implantation of spirochetes and the transmission of experimental syphilis to rabbits from the living paretic brain

At present this experimental syphilis has been transmitted to five generations of rabbits

The initial inoculation of brain was made into the testis of a large rabbit, June 11, 1915, and thirty-two days later, July 11, large numbers of spirochetes were demonstrable in both testes by aspiration August 12, about two months after the initial inoculation, the right testis was castrated under aseptic precautions, one portion being used for implantation into other animals, and the remaining portion for cultural experiments

After thorough maceration with normal saline, the material was planted deep into tubes of rabbit kidney ascitic agar mediums The cultures were covered with paraffin oil and cultivated under anaerobic conditions Six tubes were inoculated from this material Examination of the tubes about four weeks later showed no visible growth, but spirochetes in moderate numbers were found in the depth of the medium in two tubes This series was allowed to incubate further, and November 6 the two positive tubes were found to have visible growth in which a pure culture was found Secondary cultures were made from these two tubes Three weeks later, Nov 27, 1915, a fine growth was seen in the second subcultures, which microscopically proved to be a pure culture in each case Third subcultures were made from the richest of these two tubes Jan 3, 1916, subculture 3 showed a pure culture of actively motile organisms

At present, over four months have elapsed from the time of the initial inoculation, and the organism has been carried through three successful subcultures, at the end of which time these are as actively motile and as rich as at first.

The question of a neurotropic strain with certain morphologic characteristics, different from other spirochete strains, has been suggested by the work of Noguchi,[2] Nichols and Hough,[3] and others Clinical evidence points suggestively to the existence of such a strain In the organisms which we have isolated from general paresis, there is no morphologic difference demonstrable In the rabbit testis, numerous short thick forms with few spirals were found In the cultures from this material, however, the predominating form was the typical fine spirochete with many convolutions, identical, in fact, with those seen in early cutaneous syphilids

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[1] Wile, U J Experimental Syphilis in the Rabbit Produced by the Brain Substance of the Living Paretic, Jour Exper Med, 1916 xxiii, 199

[2] Noguchi, H München med. Wchnschr, 1913, lx, 2484

[3] Nichols, H J, and Hough, W H Positive Results Following the Inoculation of the Rabbit with Paretic Brain Substance, The Journal A. M A, July 12, 1913, p 120

It is worthy of note, however, that although we had rich material to begin with, the cultures grew much more slowly and much less luxuriantly than do those cultivated from the early cutaneous or mucous membrane syphilids On the other hand, it is to be noted that they are extremely viable Examination at present of the original cultures, which have been disturbed by frequent examination and transplantation, still shows moderate numbers of organisms, actively motile and apparently as viable as when first seen

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SANITATION AND THE CONTROL OF PELLAGRA

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That the incidence of pellagra is not decreased by improved sanitation and general disease prevention methods, and that it is materially increased by business depression and increased prices of food, is the conclusion that must be drawn from the experience obtained in this city during the past five years

The following tables show the improvement in health conditions which have been secured since 1911 through improved water supply, excreta disposal by means of sanitary sewers, the general sanitation of the city, incineration of all waste and refuse, strict laboratory control of milk and water supply and the infections that are subject to laboratory control, market and food inspection, improved drainage, medical school inspection, and the various other methods used for human conservation in modern public health work

TABLE 1—COMPARISON OF GENERAL DEATH RATES PER THOUSAND

Year	White	Black	Total
1911	19 94	34 78	29 43
1912	14 99	28 55	21 46
1913	13 30	24 94	19
1914	12 27	25 80	18 62
1915	11 1	22 8	16 4

TABLE 2 —COMPARISON OF DEATH RATES UNDER FIVE YEARS PER HUNDRED THOUSAND COMPUTED ON ENTIRE POPULATION

Year	Rate
1911	1 123 03
1912	655 94
1913	651 24
1914	644 11
1915	474 2

TABLE 3—COMPARISON OF DEATH RATES FROM ENTEROCOLITIS PER HUNDRED THOUSAND

Year	Rate
1911	411 64
1912	320 84
1913	206 72
1914	220 02
1915	80

TABLE 4—COMPARISON OF DEATH RATES FROM TYPHOID PER HUNDRED THOUSAND

Year	Rate
1911	100 98
1912	35 64
1913	50 09
1914	25 5
1915	9 2

TABLE 5 —COMPARISON OF PERCENTAGE OF DEATHS FROM COMMUNICABLE DISEASES

Year	White Per Cent	Black Per Cent.	Total Per Cent.
1911	50 34	54 42	54 16
1912	40 27	61 05	53 57
1913	34 76	45 40	41 47
1914	31 86	44 21	39 74
1915	22 39	32 59	30 20

The percentages in Table 5 are computed to show the relation between the total number of deaths and the number of deaths from all known communicable diseases, including pellagra

While this improvement was continuous, as shown in these tables, the death rate from pellagra shows a marked increase in 1915 over 1912, 1913 and 1914 In Table 6 is given a comparison of the death rates from this disease for the past five years

TABLE 6 —COMPARISON OF DEATH RATES FROM PELLAGRA PER HUNDRED THOUSAND

Year	Rate
1911	38 83
1912	21 38
1913	16 69
1914	38 26
1915	64 6

The years 1912 and 1913 were marked in this section by exceptional prosperity The trucking industry and other industries of the county were very prosperous The cotton market was active, and there was a marked increase in manufacturing and building activities There was plenty of work for all, wages were good, and the prices of food were from 15 to 20 per cent lower than they are now With the outbreak of the war in the middle of 1914, there was an immediate depression, which has been more or less continuous though less marked at this time than up to June, 1915 The increase in the incidence of pellagra and the increase in the death rate of this disease follow this business depression very closely

In the rural sections of New Hanover County a special intensive effort at sanitation began in July, 1914 The effort was concentrated on excreta disposal and water supply in order to control intestinal infections, which were especially prevalent By the beginning of 1915 every rural home, black and white, in the county had been supplied with a privy at the owner's expense At that time there were but twelve privies in the rural district which were not provided with receptacles and in which there was not a more or less successful effort at fly proofing These conditions were maintained throughout 1915 Indeed, there was a marked improvement in this respect during 1915 In December, 1914, Prof C W Stiles and Dr L L Lumsden of the United States Public Health Service made a survey of the rural sections of this county with special reference to the methods of excreta disposal in use A second survey was made in December, 1915, by Prof C W Stiles of the United States Public Health Service and Dr George M Cooper, director of the Bureau of Rural Sanitation of the North Carolina State Board of Health The last survey disclosed the fact that on the system of scoring used by the United States Public Health Service, the rural sanitary index in New Hanover County has been increased in a single year by 45 per cent The rural population has been instructed in all disease prevention methods with the exception of pellagra, the means of preventing pellagra being only recently established The incidence of this disease in the rural section as in the city has increased during the past year This incidence among the rural population from the cases reported shows three cases per thousand inhabitants, while in the city the incidence is a little more than one case per thousand Our experience here teaches us that there are a great number of mild cases of this disease which are not reported and of which we have no knowledge, only those being reported in which the patients present themselves to physicians and hospitals for treatment The numerical relation existing between the rural and city cases is, we believe, about that stated above

In our local experience these conclusions seem to be justified

1 There is no existing relation between soil pollution and the incidence of pellagra

2 Close supervision of all cases, disinfection, fumigation, isolation and the other usual means of controlling infection have no influence on pellagra incidence

3 Business depression, lack of employment, a limited market for products, and increased price of food, with consequent increase of indigence, increase the incidence of pellagra very definitely

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SYSTEMIC POISONING WITH BISMUTH*

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Bismuth salts have been used for many years for diagnostic and therapeutic purposes, but their effects after absorption on the human system have received only scant attention This is all the more remarkable in view of the fact that the other heavy metals have been the object of careful study in systemic poisoning, and are known to produce well recognized symptoms Edsall has a very exhaustive article on metallic poisonings in Osler's "System of Medicine," but makes no reference to the toxicity of bismuth The subject, however, has not been neglected so far as experimental work is concerned, as shown by the literature As long ago as 1786, there were reports of vomiting, twitchings, dizziness and somnolence due to the ingestion of these salts It was thought that these symptoms were due to impurities, particularly arsenic and lead, and it is possible that such was the case at that time

In 1882 Kocher used bismuth subnitrate as a dusting powder on granulating surfaces Although these wounds healed, rather severe constitutional symptoms followed the continued application in several cases He observed a stomatitis progressing in some instances to ulcerations, diphtheritic gingivitis, dysphagia, nephritis, nausea and diarrhea One of his patients died, and at necropsy large purplish spots were found scattered over the lining of the colon Following his observations, others reported cases of similar type in which bismuth had been used for one cause or another

Impressed by these reports, Steinfeld and Meyer, in 1884, undertook certain experiments in order to determine the toxicity of bismuth in animals Their results showed that two forms of intoxication could be produced The manifestations in the first or acute class were convulsions, dyspnea and bradycardia, with a fatal termination In the second or chronic type, the animals showed marked lassitude, ulcerative stomatitis, anorexia, diarrhea, loss of weight and body heat, albuminuria, and sometimes tetanic contractions The postmortem examinations in the latter class revealed ulceration and necrosis of the mucous membrane of the colon Their explanation of this condition was that the bismuth circulating in the blood in a soluble form was precipitated by the hydrogen sulphid in the colon, and that the newly formed bismuth sulphid produced a necrosis by blocking the capillaries and lymph channels

Other observers confirmed these experiments and showed that while bismuth subnitrate could be administered by mouth to dogs without untoward effects, very definite evidences of poisoning appeared after subcutaneous injections, producing the symptoms described by Steinfeld and Meyer For example, one of Dalché's dogs received subcutaneous injections for twelve successive days It died on the thirteenth day Five days before death a brownish glistening line appeared on the gums of the anterior molars and on the mucous membrane of the inferior maxilla, and dark violet spots were seen on the mucosa of the left cheek During the remaining days, similar lesions developed throughout the mouth, and at necropsy necrotic plaques were found on the lining membrane of the cheek

Dalché's conclusions[1] were that the most striking feature of bismuth poisoning is the *stomatitis* It is characterized by lesions of a brownish purplish color appearing on the tongue, buccal membrane and throat It may remain stationary, but in the advanced cases the teeth are loosened, the gums become spongy, and there is a mild salivation The breath has a fetid odor, and there is difficulty in swallowing The lesion usually begins at the level of the molars and is most severe where the teeth come *in contact* with the mucous membrane Generally these spots are covered by a whitish diphtheritic membrane surrounded by a blackish areola Dalché believes that the stomatitis results from the elimination of the salt through the salivary glands, and may follow within a few days after the bismuth injection Attention is called to the similarity of the stomatitis caused by lead, mercury and bismuth, lead being the least severe because it is not easily absorbed, except under certain conditions of peculiar susceptibility Mercury stands midway between lead and bismuth In view of the high atomic weights of these metals, Dalché suggested the possibility of all heavy metals producing similar lesions provided they are absorbed in sufficient quantity Normally bismuth subnitrate is insoluble, but when it comes in contact with juices rich in albumin, changes occur, converting it into a soluble salt

Dalché's experiments were repeated by other observers with *other* salts of bismuth, and similar results were obtained Thus it was shown by the constancy of symptoms and lesions experimentally produced, despite the *variations* in salts, that the toxic effects are due to *metallic* bismuth Up to the present year there have been forty-three reported cases of intoxication, thirteen of these fatal, following the local application of bismuth to granulating surfaces

Quite distinct in symptomatology as well as in cause are those types of so-called acute intoxication following the *internal* administration of bismuth subnitrate The great majority of these cases occur in children, and likewise in adults who have a definite inflammatory condition somewhere in the gastro-intestinal canal Stimulated by the reports of several fatalities following the use of the subnitrate salt in the intestinal tract for diagnostic purposes, Boehme[2] threw considerable light on the subject by a series of experiments He showed that bismuth subnitrate liberated nitrites whenever it was mixed with human stools, particularly those of children By injection of this mixture into rabbit's intestine, nitrites could be demonstrated in the urine

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* Read before Richmond Academy of Medicine and Surgery, Dec 1, 1915

[1] Dalché, quoted by Mayer and Baehr Surg, Gynec. and Obst., 1912, xv

These animals presented a very definite clinical picture There was noted in every instance an acute onset, dyspnea, and methemoglobinemia As this syndrome closely resembled the condition following sodium nitrite poisoning, and was very dissimilar to the manifestation produced by bismuth applied locally, Boehme clearly established the relationship between the newly formed nitrites and the clinical results Additional weight was given by a fatal case of bismuth subnitrate poisoning reported by Erich Meyer, who demonstrated nitrites in the urine, blood and pericardial fluid Beck[3] believes that the intoxication occurs only when the production of the nitrites is greater than their elimination, which is chiefly by way of the kidneys This conclusion, however, does not satisfy certain instances in which poisoning of the metallic type has followed the use of bismuth by mouth In 1896 Kohn reported a case in which the administration of bismuth subnitrate in 5 grain doses, four times daily, produced the stomatitis and other lesions of pure bismuth absorption Therefore, from these facts we are justified in assuming that while bismuth intoxication may occasionally arise following the use of the subnitrate salt internally, the great majority of such instances are due to the formation and subsequent absorption of nitrites from the large intestine The records up to this year show that there have been twenty-one cases of poisoning with eleven fatalities from the employment of bismuth internally Fortunately the subnitrate salt is very rarely used now by roentgenographers, and poisoning in this line of diagnosis is relatively infrequent

My interest in this subject was aroused by a patient who presented himself for treatment in the medical department of the Medical College of Virginia Dispensary

History—Man, colored, aged 23, whose chief complaint was sore mouth, and whose family history was unimportant, had a negative previous history with the exception of a stab wound in his left lower chest, which was followed by pneumonia two months prior to his present illness The hospital records show that at the expiration of the acute infection, his left pleural cavity was tapped and a large quantity of pus was evacuated At this time 500 c.c. of bismuth subnitrate paste (33⅓ per cent. bismuth subnitrate and 66⅔ per cent. petrolatum) were introduced Ten days later 750 c c of the paste were given He had not been exposed to lead, nor had he been taking mercury in any form

The patient stated that two weeks before, which was the date of the second injection of bismuth, he began to complain of sore places in his mouth Starting on the tongue, three spots extended to the gums, cheeks and throat. He had had increasing difficulty in swallowing and for several days he had been able to take only liquids in small amounts He had persistent headache, dizziness on arising and marked weakness His appetite had been very poor, with no nausea but extreme constipation There had been no disturbance of vision or hearing

Physical Examination—The patient was poorly nourished, and flabby muscles showed loss of subcutaneous fat. The skin had a pasty sallow color Eyes The sclerae were pearly The mucous membranes were rather pale The pupils were equal and reacted normally The ears and nose were negative Mouth The gums were somewhat cyanotic and definitely swollen The jaws could be separated with difficulty, and as the tongue was protruded there was seen extending along each side a violet colored sloughing area covered by a sticky whitish diphtheritic membrane This lesion measured 2 cm in width at the base of the tongue and approximately 5 mm at the tip Its borders were well defined and practically continuous Scattered over the buccal mucosa, there were a number of discrete as well as confluent spots of a similar character varying in size from a pea to the largest one, which occupied the entire portion of the right cheek from the first molar to the anterior pillar of the tonsil On this side, the parotid gland was swollen and tender to pressure. Similar lesions were present under the tongue In an unbroken line along the border of the gum adjacent to the teeth of both upper and lower maxillae, there was a heavy purplish blue deposit about 2 to 3 mm in width An identical picture was present along the inner borders of the teeth, though not to such an extreme degree The gums were soft, the teeth were loose, and the salivation was so pronounced that the patient lay with his mouth over a basin to catch the continuous flow of saliva His throat could not be examined The glandular system was negative The heart and lungs were clear with the exception of evidences of fluid in the left pleural cavity The abdomen and extremities were negative Hemoglobin was 80 per cent., leukocytes 14,000 The differential count was normal Urinalysis revealed specific gravity 1 020, a heavy cloud of albumin, a faint trace of sugar, many granular and hyaline casts, and a great excess of epithelial cells After the patient's admission to the hospital, his urine became dark brown, and on standing showed a heavy black sediment The total amount in twenty-four hours was 500 c.c The patient's temperature varied from 90 to 110

The Roentgen examination of the chest revealed a dense circumscribed shadow in the left pleural cavity After the evacuation of the encapsulated bismuth by Dr W T Graham, the distressing symptoms gradually subsided Subsequent urinalyses indicated a rapid restoration of the kidneys as shown by the disappearance of the albumin, sugar and casts

When the patient was seen two months later, the ulcers in his mouth had entirely healed, but the steel blue lines along the borders of his teeth were still present In order to exclude the possibility of systemic poisoning through contamination with one of the heavy metals occasionally found in the commercial bismuth, 5 liters of urine were evaporated to dryness, and the residue was tested for antimony, arsenic, lead and mercury None was found, but bismuth was present in large quantities I am indebted to Dr Jacob Rosenbloom of Pittsburgh for these tedious analyses

The profound influence of bismuth on the organs is well shown by a postmortem report of Mayer and Baehr,[4] who had the opportunity to study the condition of a patient dying six weeks after the injection of 3 ounces of Beck's paste They found the kidneys showing the most intense parenchymatous change The glomeruli were practically normal, but the epithelium in all the tubules was in an advanced stage of degeneration Most of the tubules presented widely dilated lumina, filled with cellular debris and hyaline material Throughout the organ the capillaries were intensely congested The liver showed a mild cloudy swelling and some cellular disintegration The small intestine was deeply injected, and contained areas of necrosis increasing in intensity as the ileocecal valve was approached The mucosa from the pyloric ring to a point 15 cm from the valve was *stippled with a fine* black pigmentation The individual particles were visible only on close inspection, and at a distance gave the membrane a steel gray color In the lower ileum the crypts over Peyer's patches were marked by coarser black granules In the large intestine, they found the entire mucosa undergoing necrosis and covered by a greenish black diphtheritic membrane The deeper portion was infiltrated with polymorphonuclear leukocytes The rest of the submucosa was thickened and edematous Microchemical tests showed the presence of bismuth in the liver, kidneys, spleen and intestine The absence of methemoglobinemia and cyanosis and the gradual course of the disease eliminated the element of nitrite poisoning

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[2] Boehme Munchen med Wchnschr 1908 lv 89

[3] Beck Emil G Ann Surg February 1914 Toxic Effects from Bismuth Subnitrate The Journal A M A. Jan 2 1909, p 14 Tr Sixth Internat Cong Tuberc. 1908

[4] Mayer and Baehr Surg Gynec. and Obst 1912 xv, 309

Although most observers state that bismuth is absorbed from granulating surface *only after it has* been converted into an albuminate, Mayer and Baehr, after demonstrating the metallic granules within the leukocytes, are disposed to believe that absorption is largely carried on by phagocytosis These heavily laden cells were found in the muscular tissue at a considerable distance from the portal of entry According to these writers, the excretion of bismuth is mainly through the kidneys and the gastro-intestinal tract, although others have demonstrated it in the bile, milk and saliva The weight of evidence indicates that metallic bismuth poisoning results generally from the *local* application, whereas the toxic effects following the internal administration of the subnitrate salt result as a rule from the formation and absorption of nitrites

Bismuth, therefore, is not the innocuous drug once described, but to some individuals may prove to be most dangerous Sixty-five cases of poisoning with twenty-four fatalities should serve as a warning against its indiscriminate use Even Beck admits that of the 1,100 cases treated by him, 30 per cent showed pigmentation of the gums, thus indicating the absorption of the bismuth and its potentially toxic effects We as medical men cannot refrain from noting with apprehension the *unmistakable action of this agent on the* kidneys and other organs in susceptible individuals While we recognize the value of bismuth in diagnosis, we should not lose sight of its fate in the body after absorption Although the actual number of cases of poisoning is not relatively large, yet there must be many instances of mild intoxication which have not been recognized Realizing this selective action of the drug on the kidneys, it would seem that we are subjecting our nephritic patients to considerable hazard when any salt of bismuth is administered in large quantities internally or locally [5]

8 West Franklin Street

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[5] In addition to the references already given, the following will be found of interest

Camerer U S Naval Med Bull, January, 1911

Ely Med Rec., *New York, January,* 1912

David, V C, and Kauffman, J R Bismuth Poisoning, The Journal A M A, March 27, 1909, p 1035

Pancoast Univ Pennsylvania Med Bull, Aug 12, 1906

Warfield, Louis Am Jour Med Sc, November, 1913

Chronic Organic Disease—Public fear and public activity are easily excited by the mental picture (more or less accurate) of the horrific micro-organisms of epidemic disease, while the continuous ravage of chronic cardiovascular and renal diseases passes unnoticed It is true that we now recognize micro-organisms as the principal and immediate cause of chronic organic disease, but this is not now known to the public and it is ignored if it *is actually* known by many physicians —Eugene Lyman Fisk, M D

REPORT OF TWO CASES OF CARDIOVASCULAR DISEASE CAUSED BY STRICTURE OF THE URETHRA

N P Yeardley, M D, Parkersburg, W Va.

Case 1—*History*—Man, aged 37, white, merchant, height 5 feet 11 inches, weight 150 pounds, with unimportant family history, has had the ordinary diseases of childhood He contracted gonorrhea eighteen years ago, which ran a protracted course He had a crop of venereal warts which were cut off Twelve years ago, his legs swelled, and his arms and legs were cold all the time He had great trouble keeping warm Accompanying these symptoms, a white urethral discharge, tenderness in the right hypochondrium, and pains in the lower abdomen developed He was disturbed at night by painful and tingling sensations in the right arm While at work he suffered from paroxysms of pain of a dull boring character, located in the epigastrium These continued at semimonthly and monthly intervals over a period of two years, when deep jaundice developed Following one of these attacks, in 1911, he was taken to the hospital, and the gallbladder was opened and drained The jaundice disappeared Eight months after operation, he developed a constant, aggravating pain in the back in the lumbar region, which has remained since Later sugar was found twice in the urine He received two injections of salvarsan without benefit to the symptoms

Symptoms—Subjective The patient complains of a constant dull pain in the right hypochondriac area He is dizzy on exertion, when lying in bed or in the barber's chair he becomes dizzy when he turns on the right side, the arms and legs are always cold, he has constant pain in the back, he gets up at night three or four times to urinate, he has gas on the stomach and bowels, and is able to do but little work

Objective The patient is well developed and fairly well nourished The temperature is normal, pulse 85, large, irregular, tension weak, respiration 18 The skin is very pale, the teeth decayed The oral and nasal cavities and the lungs are normal The heart is enlarged and the tones weak, and irregular on exertion There is a scar over the gallbladder There is tenderness over the right hypochondrium and epigastrium The liver is impalpable The intestines are distended with gas The extremities are cold and moist, the nervous system normal Examination of rectum reveals the prostate enlarged and nodular In the urethra is found an extensive, soft, irritable stricture, with two points of stenosis involving the bulb and penile urethra It admits a No 16 French sound When the stricture has been sufficiently dilated, the urethroscope shows the prostatic urethra and verumontanum intensely congested In the urine are a few pus cells, but no sugar or albumin

Treatment and Course—The stricture disappeared gradually after the use of sounds for a period of six months In the meantime the patient's digestion has become normal with a resultant gain in weight of 30 pounds, the complexion has become pink, the patient's strength has returned and the symptoms have disappeared, with the exception of the pain in the back and the nocturnal urination These improve gradually under topical applications to the prostatic urethra and massage, and have now nearly disappeared

Case 2—*History*—Man, aged 29, white, porcelain worker, weight 145 pounds, height 5 feet 11½ inches, with unimportant family history, has had the ordinary diseases of childhood, was sick seven weeks with lead poisoning at the age of 21, and had gonorrhea three years ago The present trouble started nineteen months ago with a marked case of icterus, in the morning he felt tired and worn out until he got "warmed up" by exercise, he had weak spells frequently, he slept poorly, and would waken from sleep with a start, "almost jump out of bed and be all a tremble." Ten months ago, he felt tingling and painful sensations in the legs and left arm, accompanied by a smothery sensation He went to bed, he felt shaky all over, the attending physician found the liver and spleen enlarged The patient was confined to bed four months and *to the house* six weeks

Symptoms—Subjective At the present time the patient complains of dizziness, palpitation of the heart, of feeling very weak and of having a constant breathlessness After resting for some time he feels an inability to use the extremities He experiences tingling sensations and cramps in the muscles of the leg on walking He suffers also from cold hands and feet, constipation and gas

Objective The temperature is normal, pulse 80, large, low tension, regular, artery thickened, respiration 15, audible The skin is jaundiced, but otherwise negative There is dilatation of the right temporal and superficial cervical veins The mucous membranes are slightly pale, the conjunctivae jaundiced The throat and nasal passages are negative The supraclavicular and postcervical lymphatic glands are palpable, pulsation is seen at the jugulum The thorax is long and flat, and is hyperresonant on percussion The lung borders are at the seventh rib in front and at the eleventh articulation behind, vesicular breathing is diminished in intensity and roughened, expiration is prolonged The apex beat of the heart is absent, the pulsation of the right ventricle is seen in the sixth and seventh interspaces near the left sternal line The superficial cardiac dulness is increased downward and to the left The heart is irregular at times, the pulse remaining constant, the tones are weak, and are heard best at the lower end of the sternum Examination of the abdomen reveals epigastric pulsation, the liver is impalpable, the splenic boundaries are normal, there is tenderness on pressure over the epigastrium The extremities are cold and clammy, the palpable blood vessel walls are thickened, the muscular tone is good

The pupils react normally to light, accommodation and convergence The deep reflexes are normal with the exception of the patellar, which is diminished The peripheral nerves are normal The prostate is enlarged, the right lobe hard Examination of the urethra reveals extensive stricture, soft in consistency, occupying the bulb, scrotal and penile sections, extending to within 1 inch of the meatus, having three points of constriction The caliber is No 18 French Albumin and sugar are absent from the urine, pus cells are present, there are no casts The Wassermann test is negative

Treatment and Course—The stricture resolved readily under treatment with sounds The patient has now been under treatment for two months, he has gained in strength and 10 pounds in weight, the jaundice has nearly disappeared, the pulse tension has improved, the pulsation of the right ventricle is no longer seen In brief, the different manifestations have improved *pari passu* with the resolution of the morbid urethral process

A CASE OF SYMMETRICAL GANGRENE OR RAYNAUD'S DISEASE ASSOCIATED WITH EPILEPSY

David F Weeks, M D., and Dan S Renner, M D,
Skillman, N J

J T., aged 23, Italian, a well-nourished man, was admitted to the New Jersey State Village for Epileptics in October, 1912, suffering from epilepsy of the grand mal type, with seizures occurring both nocturnally and diurnally

From his admission to the village to his admission to our hospital, Nov 1, 1915, he had required no special medical or surgical attention except that in June, 1913, he was treated for a lime burn of his feet, and in July of the same year for ivy poisoning From both of these conditions he made good recoveries

Oct 25, 1915, following a series of convulsions, he complained of pain in his left foot and ankle Examination showed the temperature normal and the pulse slightly accelerated, but failed to reveal any reason for the pain The patient was put to bed, and the ankle was painted with tincture of iodin

Four days later considerable swelling of the ankle was noticed, there was no pitting on pressure, the pain still continued Compresses of magnesium sulphate in saturated solution were applied without beneficial results

October 30, the rectal temperature was 104 F The foot was very painful to touch and manipulation Magnesium sulphate compresses were continued, and 5 grains of sodium salicylate administered every four hours

November 2, the patient was transferred to the hospital Unguentum ichthyol, 25 per cent, dressings were applied, without benefit The rectal temperature at this time was 103 8 F

November 3, there was some bluish discoloration of the toes and dorsum of the foot, which continued until the 8th, when several punctures were made in the toes, following which they became pink, the swelling was somewhat reduced, and the foot became less painful

November 10, the right foot and ankle showed some bluish discoloration The skin of the dorsum of the left foot showed a tendency to slough The left leg showed marked discoloration, extending to the junction of the lower and middle thirds Three days later, while this foot was being dressed, the skin broke on the plantar surface and was removed The skin slough continued until the central portion of the plantar surface was removed, with a portion of the skin covering the instep

The discoloration progressed up both legs, covering equal and corresponding areas on each leg The color was most pronounced on the left leg There was at this time some maceration between the toes of the left foot The toes of the right foot were beginning to atrophy, they showed the characteristic waxy appearance About this time a few blebs filled with serum appeared on the inside of the right instep

November 16, the patient showed marked toxic symptoms, and failed steadily throughout the day and night The discoloration progressed up both legs

On the morning of November 17, the course of the internal saphenous vein was distinctly outlined as a bluish green line over the lower third of the left leg This discoloration had progressed to the middle third of the leg at the time of death, which occurred at 5 p m

The bluish discoloration had steadily progressed up both legs to the junction of the middle and upper thirds, covering corresponding areas on both legs a little higher on the inner than on the external surfaces, and somewhat darker on the left than on the right

SUMMARY

The duration of the disease was twenty-three days when it terminated in death

It was associated with epilepsy in a foreigner (Italian), among whom the disease is said to be most frequent and severe

As far as we are able to learn, it is the first attack our patient ever had

A blood examination made on the eighth day of the disease showed a leukocytosis of 10,000, and hemoglobin, 65 per cent, the blood cells not counted

From the available history, it was not the result of hereditary transmission

Hyperesthesia to touch was a prominent symptom Pitting on pressure was absent during the entire course of the disease

The patient had five grand mal convulsions during this illness

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Mental Manifestations of Pellagra.—W F Lorenz in *Public Health Reports* thus sums up his conclusions after a study of the mental manifestations of pellagra The psychosis that accompanies pellagra has the characteristics of the toxic psychoses in 90 per cent. of the uncomplicated cases admitted to an institution for the insane It has great resemblance to the acute alcoholic psychoses When pellagra develops in an individual already insane synchronously with the physical manifestation, a mental confusion or delirium may be added to the existing psychosis Were an etiology to be suggested from the mental disturbances alone, the causes would fall among a group of agents similar to alcohol, in that they are not products of bacterial or parasitic invasion of the body, but chemical intoxicants in the narrower sense

New Instruments and Suggestions

THE PREPARATION AND PRESERVATION OF COMPLEMENT

Loyd Thompson, Ph B, M D, Hot Springs, Ark

Nearly all small serologic laboratories are confronted by the problem of securing guinea-pig serum for the Wassermann and other complement fixation tests Where only a few tests are made at a time, and a pig is sacrificed each time for his blood, the expense often becomes greater than is justifiable This may of course be partially overcome by bleeding the pig from the heart Even so, considerable complement may be wasted, and another pig must be bled the next time tests are to be made

Complement may be frozen and preserved at a low temperature (—15 C) for several months, but most small laboratories are not equipped for such procedures

Austin (The Journal, March 14, 1914, p 868) advocated making a 40 per cent dilution of the guinea-pig serum with 25 per cent sodium chlorid solution Then in his tests he used 0 6 per cent salt solution instead of the usual 0 9 per cent, and states that by so doing he gets approximately 0 9 per cent in his tubes

In order to secure accuracy of dilution as well as to secure a suitable dilution for titration, the following technic has been devised by me and is now used in my laboratory

An 8 1 per cent sodium chlorid solution is prepared and autoclaved Fresh guinea-pig serum is diluted with this solution 1 1, and sealed in small tubes, 2 c c. to the tube It will be seen that each tube contains 1 c c of pure guinea-pig serum containing (supposedly) 0 9 per cent of sodium chlorid, or 0 081 gm The entire sodium chlorid content of each tube is 0 09 gm, corresponding to the quantity each 10 c c of normal salt solution should contain

Therefore, in order to make a solution containing 0 9 per cent sodium chlorid, it is necessary only to add 8 c c of distilled water to the contents of each tube, and we have a 1 10 dilution of guinea-pig serum

This is titrated before each test, and the unit usually used in my laboratory is 0 5 c c Allowing 3 c c for titration, it will be seen that each tube of "salted" serum will make enough of the diluted complement for the titration and for fourteen tubes, that is, enough for five tests and positive and negative controls

It is the custom in my laboratory to bleed from the heart three good sized guinea-pigs at one time, securing from 20 to 30 c.c. of blood, which yields from 10 to 15 c.c of pure serum, and lasts from ten days to two weeks, depending on the number of tests being made While the complement is usually not kept longer than two weeks, some six weeks old has been used, and was apparently as active as ever

A NEW CAVITY SIGN IN PULMONARY TUBERCULOSIS

F W Wittich, A M, M D, Pokegama, Minn
Superintendent, Pokegama Sanatorium

Last September, while I was examining a patient with chronic advanced pulmonary tuberculosis with a fair-sized cavity, the stethoscope was placed over the cavity when the patient swallowed I was startled at the loudness as well as the character of the sounds elicited A series of coarse crackles was heard that seemed directly beneath the bell of the stethoscope

It frequently happens that in the course of routine examinations of the phthisical chest when the patient is instructed to breathe out, cough and breathe in, he will at the end of inspiration unconsciously and involuntarily swallow, so that the normal reflex of deglutition is heard and familiarized It sometimes happens that the normal sounds produced in the chest by swallowing follow so closely the fine posttussic crepitations characteristic of tuberculous involvement that the two seem blended, misleading an inexperienced auscultator unless he has noticed the patient's swallowing

After the abnormal sounds were heard in the case mentioned above, the stethoscope was transferred to a portion of the lung supposed to be fairly unaffected, and the ordinary swallowing sound seemed distant and muffled in comparison When the stethoscope was returned to the cavity area, the former sounds were again produced The area of abnormal sounds corresponded fairly accurately to that of increased vocal resonance, bronchial breathing, and whispering breath sounds

In the belief that the sign might be of some value in confirming one's diagnosis in doubtful cases of excavation, it was used whenever possible as a routine measure in chest examinations Very seldom did the sign fail to be obtained in greater or less degree where the other physical signs of cavity were present. Except as a confirmatory sign, it did not seem to be of special value until a case came up in which the signs of slight excavation were doubtful The swallow sound was strikingly present only over the area questioned, and a diagnosis of cavity was made which was later confirmed when the excavation became more extensive and there was no doubt as to its existence

The normal act of swallowing produces a uniform sound in most persons It is caused by the tongue, the contraction of the muscles of the pillars of the fauces, and the elevation of the larynx, particularly the contraction of the mylohyoid muscle in the floor of the mouth, which was shown by Kronecker and Meltzer (*Arch f Physiol*, 1883, suppl vol., p 328, *Jour Exper Med*, 1897, ii, 453) to be the most important factor in shooting food suddenly through the pharynx into the esophagus A second or minor sound is apparently caused by the peristaltic movement of the musculature of the esophagus The sound is of most value when water is not swallowed, as there is usually a dry squeak produced when nothing is swallowed that is of sufficient intensity to be auscultated

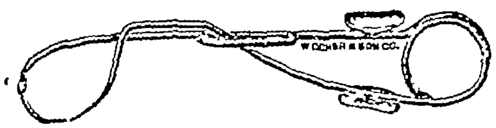
There is no claim of originality in the observance of the sign It is merely suggested because I have not seen any statement of its having been used before If found by other observers to be of any diagnostic value it merits further trial

TOWEL HOOK

R M Harbin, A B, M D, Rome, Ga
Fellow of the American College of Surgeons

Advantages of these towel hooks are

1 They furnish a ready means for constructing a coffer dam that will prevent skin contact of viscera If the edges of the incised skin are transfixed through the middle section of a towel, folding the towel back will conceal the hooks throughout the operation



Towel hook (actual size)

2 Having short handles, these hooks do not require to be removed when the whole hand is introduced into the incision, and they will not interfere with the use of the retractors, or traumatize the skin

3 They are inexpensive. Eight or ten would be required for an ordinary incision, and they may be strung on a long piece of tape

4 The shoulder *S* prevents the towel from receding from the edge of the skin, and the size of these hooks may be increased somewhat for a long incision

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Scope of Physician's Activities—Every physician should act in the capacity of a teacher, preacher and health superintendent—John W Drake, *Jour Oklahoma State Med Assn*, February, 1916

Therapeutics

AMEBIC DYSENTERY

The value of ipecac in the treatment of bowel infections with the endameba has long been known, as has also the disagreeableness of the treatment. A. Rogers' assertion,[1] in 1912, that the soluble salt of emetin, the active principle of ipecac, could be given hypodermically to cure amebic dysentery, was welcome. The truth of this assertion has now become generally established, and the points for discussion are the best method and the best dose, and the prevention of recurrences of the disease.

Vedder[2] recently discussed the present status of the treatment of this disease, and Lyons[3] answers some of the suggested questions. Lyons finds that emetin will probably not act locally in the intestines, but must be absorbed to act, and hence kills endamebas only in the tissue. When they are killed, the lesions heal. Emetin is irritant to the stomach and intestines, and causes vomiting and diarrhea when given by the mouth, unless in small doses. It will cause diarrhea if given too long by the mouth or subcutaneously, and the best method to give it is subcutaneously. Intramuscularly it is too irritant, and intravenously too dangerous. In the colon it is more irritant and no more efficient as a bactericide than some other antiseptic, a silver salt, for instance. The soluble hydrochlorid is slightly acid, and even in small doses subcutaneously will cause pain and some considerable local irritation, but if the dose is small, this inflammation is not serious, and the induration is not great.

Lyons finds that the best dose in an average case of endamebic dysentery is for an adult one-third grain of emetin hydrochlorid three times a day, given hypodermically, and this dose should be continued from one to two weeks, or at least four days after the stools became formed. When it is given for longer than two weeks, a diarrhea is liable to be caused by the emetin.

Previous to the emetin treatment, Lyons gives a saline cathartic, and castor oil or a saline occasionally throughout the treatment. This not only washes out the dead endamebas, but may also cause the encapsulated germs to change their form into one that the emetin can attack. It is these encapsulated endamebas which cannot be killed by the emetin that often cause recurrences.

Permanently to eradicate the disease he advises giving a second series of emetin injections two weeks after the first, and a third short series after three weeks more, and, if there has been a recurrence, even a fourth series later.

The only undesired effects of emetin injections in the dose recommended, besides the local irritation, are vomiting and diarrhea. Large doses have caused peripheral neuritis, purpuric eruptions and edema. Emetin may, of course, be given by the mouth if there is a serious objection to hypodermic administration, but it is ordinarily inadvisable.

Twenty-five per cent of Lyons' cases were recurrences, hence the necessity for repeated bacteriologic examination of the feces, and the wisdom of the intermittent treatment advised.

Not every patient who shows endamebas in the stools is ill. Some become tolerant, and are then carriers. Emetin is not very successful in these cases. Vedder suggests colon washing with quinin or silver solutions.

Barlow[4] reports a study of endameba dysentery in Honduras. He examined forty cases from eight to fourteen months after cessation of treatment, and found that 80 per cent of the patients did not have a relapse for seven or more months, if they were treated for ten days continuously by not less than 1 grain of emetin per day. A shorter number of days of treatment allowed relapses, and a combination of the emetin treatment with ipecac by the mouth did not prevent such relapses. He found it preferable to give the emetin once a day in 1 grain doses.

Ravaut and Krolunitski[5] found the endamebas in the dysenteric stools of some French soldiers in northern France. In these cases they did not find emetin injections very satisfactory. They did, however, have success with the administration of salvarsan intravenously.

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

LYSTERS PREPARED CASEIN DIABETIC FLOUR.—Milk casein to which has been added a leavening mixture consisting of sodium bicarbonate and potassium bitartrate and also some sodium chloride, and saccharine 0.057 Gm. per 100 Gm.

Actions and Uses.—This flour is employed in cases in which carbohydrates are contraindicated, such as diabetes, etc.

The nutritive value of 500 Gm. of Lysters prepared casein diabetic flour corresponds to approximately 2,195 calories, of which 2,030 calories are due to protein and 165 calories are due to fat.

The same quantity of milk represents 360 calories, of which 84 are due to protein and 177.6 to fat.

Dosage.—Lysters prepared casein diabetic flour is said to be adapted for the preparation of muffins. Of these three to six may be consumed daily.

Manufactured by Lyster Brothers, Andover, Mass. No U. S. patent or trademark.

ANTISTREPTOCOCCUS SERUM (See N. N. R., 1916, p. 302).

E. R. Squibb & Sons, New York.

Antistreptococcus Serum Rheumaticus.—Produced from strains of streptococcus from the joints and blood of cases of rheumatism. Intended for use in acute articular rheumatism. Dosage from 20 to 50 Cc., repeated in twenty-four hours and again if necessary, administered intravenously or subcutaneously if intravenous administration is impracticable.

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[1] Rogers A. Brit. Med. Jour June 22 1912 p 1424

[2] Vedder E. B Origin and Present Status of the Emetin Treatment of Amebic Dysentery The Journal A. M A., Feb 14 1914 p 501

[3] Lyons Am. Jour Med. Sc., July 1915 p 97

[4] Barlow New York Med Jour Oct 23 1915

[5] Ravaut and Krolunitski Bull et mém Soc. med d hop de Paris Oct. 21 1915

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SATURDAY, FEBRUARY 26, 1916

THE EXERCISE OF WALKING AND RUNNING

A familiar furniture advertisement reminds us that, inasmuch as one third of our life is spent in bed, we can well afford to give some consideration to the attainment of comfort during that period It is equally true that another large fraction of our daily experience consists in walking Even a seemingly sedentary person indulges in the movement of forward progression to an extent which he may scarcely realize According to F G Benedict, very few persons close a day of ordinary life without having walked a distance of not less than two or three kilometers (between one and two miles), and the actually studied movements of a person who might be classed as an ordinary "office worker" showed that the average distance walked per day amounted to seven miles[1] If we add to such facts the consideration that walking is a part of the necessary business routine of large groups of persons, it is surely commendable to make inquiries into the physiologic aspects of this form of exercise or bodily movement An elaborate study of the subject has lately been completed in the Boston Nutrition Laboratory of the Carnegie Institution of Washington[2]

Theoretically, in moving the mass of the individual in a horizontal direction, no special work should be required of the human body as a machine beyond that for overcoming the resistance of the air As a matter of fact, however, it is pointed out that when a person is walking, not only is energy required for the external muscular exercise, but also a heat production is necessary for the entire maintenance of the body activities, including muscular tonus, the work of circulation, respiratory muscles, and the external work of balancing the body in an upright position, none of these activities contributing directly to the work required to move the body in a horizontal direction The energy expenditure of the body in walking thus becomes a complex made up of numerous contributions for special incidental purposes The mechanical processes incidental to walking, even at a moderate pace, usually involve some extraneous muscular movements apparently not directly connected with the motion of forward progression, such as the more or less vigorous swinging of the arms and a not inconsiderable raising of the body weight with each step Since these extraneous muscular movements do not necessarily have an effective value in transporting the body weight or the superimposed load in a horizontal direction, the problem of finding the calorie requirement for such transportation of weight becomes an exceedingly complicated one

Some of these items which have been ascertained experimentally in the Boston laboratory are little short of surprising Thus it was found that when the arms are swung vigorously, as so commonly happens in walking and particularly in brisk forms of this exercise, the metabolism may be increased more than 125 per cent Furthermore, in some of the experiments it was ascertained that as much as one fifth of the energy expended by an average sized man in walking is required merely to raise the body at each step If to this is added a certain amount of energy necessarily required in turn to lower the body each time after it has been raised, it will become apparent that a very important factor in the energy consumption in walking in a horizontal direction may be the type of step employed

When the speed of progression is increased, as happens in rapid walking and still further in running, there is not only a considerably greater total expenditure of energy, but also a larger output per unit of progress accomplished From the standpoint of the energy involved, therefore, appropriate walking is an exercise physiologically more economical than is running over the same distance The apparent disadvantage may be accounted for in a variety of ways In rapid walking there is commonly a very considerable extraneous muscular movement, the arms being swung back and forth vigorously with each step Aside from this is the added fact that there is a change in the mode of locomotion In running, the steps are taken much more rapidly and considerably shortened, and the body is raised to a much higher point at each step The body is actually lifted to nearly twice the height that it is raised during walking These facts alone serve to explain why, in walking, work can be done more economically than in running Benedict and Murschhauser[2] suggest that any type of locomotion, therefore, which minimizes the raising of the body is the most economical As a natural outcome of the study it will be seen that it would be desirable for athletes and others interested in the work of forward progression to develop a gait which will eliminate these two apparently unnecessary and extraneous factors, each of which requires the expenditure of a considerable amount of energy which is not directly contributory to the motion of forward progression

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[1] Benedict, F G Proc Am Phil Soc, 1910, xlix, 162

[2] Benedict, F G, and Murschhauser, H Energy Transformations During Horizontal Walking, Carnegie Institution of Washington, Publication 231, 1915, pp 100

On the other hand, when a wholesome energy-converting effect from exercise is desired for the purposes of physical therapy, the possible value of the more extravagant performances in rapid walking and running are equally apparent One of the advantages of accumulating dependable information regarding the behavior of the body as a machine is that it helps to place the physiology of exercise on a rational scientific basis[3] The muscular performance of the workman and the soldier often needs to be considered from an angle different from that of the athlete and health seeker In all cases, however, it should be envisaged with such intelligence as modern physiology can offer

CONDENSED MILKS FROM THE STANDPOINT OF FOOD HYGIENE

The condensed milk industry in the United States began in 1856 with the granting of a patent, for "concentrating sweet milk by evaporation in vacuo" Today there are in this country more than 300 establishments, having a capacity of 15,000,000 pounds daily The statistics for 1909, the latest at hand at this moment, show an annual production of about 500,000,000 pounds, valued at more than $33,000,000 These data are sufficiently impressive to make it worth while to inquire now and then about the status of condensed milk from the hygienic as well as from the economic standpoint

It may be asked, first of all, what is supposed to be accomplished by converting fresh milk into the conserved product It is very doubtful whether the use of condensed milk can be defended primarily on economic principles Obviously it cannot be cheaper than ordinary fresh milk having the same food value, otherwise the cost of manufacture would be gratuitous By removing part of the valuable butter fat or cream from milk, however, it is possible to reduce both the price and the food value of the condensed product Bengston[4] has pointed out that the price of condensed milk has decreased with improved and cheaper methods of manufacture In 1880 the average value per pound in the United States was 12 cents, and in 1890 it was 9 cents At present it is slightly more than 9 cents, because of the fact that standards have been more definitely set A price as high as 30 cents was reported in Massachusetts in 1890 Theoretically the differences in price should, to a certain extent, furnish a criterion of the quality of the product. This was probably true to a greater extent formerly than at present, when there is greater uniformity in the quality of the different brands manufactured

A prominent argument in relation to the use of condensed milk is found in the fact that the removal of a large proportion of water from milk by evaporation improves the keeping qualities, and reduces the labor and expense of subsequent handling and transportation of the product, through the saving in bulk and weight

Much as we may prefer a supply of fresh milk under ordinary circumstances, and particularly in connection with infant nutrition, in which canned milks have been charged repeatedly with the initiation of malnutrition, it must be recalled that there are circumstances in which the fresh supply may temporarily fail Condensed milks, evaporated milks and desiccated milks are called on at times to solve the difficulties of a local deficit, particularly in places like the Philippines, where cow's milk in some form or other is a real desideratum In those cases in which it is necessary to use condensed milk in infant feeding, it should not be forgotten that certain brands have been heavily sweetened with added sugar (sucrose)

In the condensing of milks the raw milk should first be subjected to pasteurization, because the evaporation in vacuo may be carried out at a temperature considerably below 100 C (212 F), and some bacteria may thus survive It should be appreciated that condensed milks, particularly of the sweetened variety, are not always sterile, though they are commonly believed to be so Miss Bengston, of the Department of Bacteriology at the University of Chicago, has furnished some significant statements on this subject She reports that as far as investigated, the bacterial content of condensed milk appears to be limited, although counts as high as 1,000,000 per cubic centimeter have been found in a few cases It is doubtless true that the viscosity of the medium, and, in the case of the sweetened milks, the high sugar content, tend to inhibit the growth or multiplication of certain of the organisms present Andrewes in England, however, has proved experimentally that the organism *Staphylococcus aureus* could multiply enormously in condensed milk, under both aerobic and anaerobic conditions The kinds of bacteria which have been found in condensed milk bear a close relationship to those found in ordinary fresh milk, or, more properly speaking, to those found in pasteurized milk The organisms present are those which survive the pasteurizing process and also those which may enter from the air and from other sources in the processes of condensing and canning The following varieties of bacteria have been isolated by different workers streptococcus, staphylococcus, *B enteritidis sporogenes*, lactic acid producing bacilli, *B subtilis*, *B mesentericus*, and yeast cells *B coli* has been reported in one or two investigations[4]

The widely growing use of condensed milks suggests the desirability of greater information, not only with reference to the nutritive make-up of each brand or type, but particularly with respect to its bacterial condition So long as these milks are used as infant foods, they must be made available in absolutely safe form

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[3] The Efficiency of the Body as a Machine editorial, The Journal A. M A. Oct 9 1915 p 1283

[4] Bengston Ida A A Study of Condensed and Evaporated Milks Jour Home Economics 1916 viii 29

TEMPERATURE VARIATIONS AND HEALTH

It has become clear recently that variations in temperature represent one of the best tonics provided by Nature Lauder Brunton believes that tuberculous patients will not get better in a climate that does not vary from 20 to 30 degrees every day Indeed, more than one observer has hinted that the principal element of therapeutic value in the altitude treatment of tuberculosis consists in the variations of temperature obtaining to a greater degree at altitudes than in low lying districts Too large variations of daily temperature may be overtrying for delicate persons, but, as a rule, a definite drop in temperature during the night, so that the morning air is distinctly bracing by contrast with the midday temperature, is a source of stimulation To remain in a room of definite unmodified temperature for three or four hours produces a jaded feeling and a loss of appetite Even a brief walk or a ride in the open air of a winter's day will restore good feeling, arouse appetite and stimulate digestion better, perhaps, than any other measure

Recent investigations on ventilation indicate that the problem of heat diffusion is more important for comfort and general good feeling than the question of perfect chemical purity of the air Even though the air in a room is free from chemical and biologic impurities, and yet is quite still, one becomes uncomfortable if the temperature remains equable Movement of the air by a fan, without change in the temperature, lessens the discomfort, stimulates a person to mental activity, and produces a better feeling The introduction of cool fresh air from without is stimulating not so much because of its purity as because it leads to the dissipation of heat which has been accumulating in the body, gradually producing an unbearable sense of discomfort Human nature has in recent years endeavored by every possible means to make the temperature in the immediate neighborhood as invariable as possible and to keep it constant, but the effect of such a state of affairs is to lessen initiative, dampen energy and hamper the power of accomplishment Cooler air is uncomfortable for the moment, but the reaction that ensues brings with it a distinct sense of well being

The broader discussion of this subject concerns the effect of a changeable climate on human progress and power of achievement Ellsworth Huntington,[1] after a careful study of meteorology in reference to man, concludes that civilization in the broader sense of the term is largely dependent on man's being subjected to considerable variations of temperature in his environment Whenever white men in spite of their natural initiative and tendency to efficiency have to live and work in a tropical climate, they degenerate physically, mentally and morally This, Huntington insists, is due not so much to the high temperature as to the monotony of an unvarying climate and the consequent lack of Nature's most effective stimulation By observation of the amount of work done throughout the year by negroes and white men laboring under similar conditions in warm and temperate climates, he deduces that "it seems to be a law of organic life that variable temperature is better than uniformity" for human achievement

It has long been recognized that man's highest achievements have been made in the variable climate of the north temperate zone Indeed, if the fortieth parallel of north latitude be traced around the globe, it will be found that practically all the great centers of human achievement were situated not far away from it Athens, Constantinople, Naples, Rome, Florence, Paris, Vienna, Berlin, London, New York, Chicago, St Louis, San Francisco, Tokyo and Peking, as well as Jerusalem, Carthage, Sidon, Tyre, Memphis and Babylon were all situated within about 10 degrees of this magic line Almost needless to say, this is the line of greatest variation in temperature It would seem, then, as though the conclusion as to man's efficiency under circumstances in which he is subjected to considerable daily, monthly and yearly variations of temperature must be accepted

This represents an almost absolute contradiction of some of the ideas, often accepted even by physicians, with regard to the relation of comfort in nonvariable temperatures to efficiency and helpfulness It also suggests a pause in the medical practice of sending invalids to a mild climate during the winter unless they are of such delicate constitution, or so run down in health, that they cannot stand the cold because they have not the vitality to furnish a good reaction to bracing cold air Consumptives are often comfortable in a mild unvarying temperature, as in our own South or on the Riviera or the North African Coast, but the general agreement is that they do not make satisfactory progress against their disease The same thing would seem to be true as regards neurasthenics and semi-invalids The bracing tonic qualities of a northern winter in a dry climate under proper safeguards will probably do them more good, though at times they will be less comfortable than they would be in a warm southern atmosphere

While northern winters in their extreme variableness are often exasperating and would seem to make for disturbance and reduction of vitality, it is likely that they are rather prone to produce the opposite effect and have a favorable reaction on vitality and resistance to disease Certainly many a man who has had to go South with an invalid relative during a winter has found during the following summer that he actually missed the winter and its stimulating effect, and that the summer weather, as a consequence, was doubly prostrating Something of this at least is more than probably true for many persons of subnormal health Provided their vitality is sufficient to enable them to stand successfully the vicissitudes of a northern climate, such persons emerge from a winter in it in better condition than if they passed it more comfortably in a milder, less changeable environment

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[1] Huntington, Ellsworth Civilization and Climate, New Haven, Conn, Yale University Press

ACQUIRED TOLERANCE OF MORPHIN

The marked tendency toward habit formation which is so conspicuous and deplorable in connection with the use of morphin is associated with an enormously increased tolerance for the drug How this is acquired and what is signified by the ability to take doses of a substance which ordinarily would prove highly toxic or even fatal to the nonhabituated individual have been the subject of much discussion To say that the tissues become adapted to the presence of morphin merely clothes in words our ignorance of the real nature of the tolerance which develops

In extreme tolerance, the daily quantity used may reach ten times the ordinary toxic dose A favorite explanation holds that the oxidative powers of the organism are increased with the prolonged use of the drug The evidence for this view is sought in Faust's well known experiments showing that dogs which have become accustomed to morphin reach a stage at which they no longer excrete it in the feces[1] From this it has naturally been assumed that more of the poison is destroyed in the tolerant organism than is usually the case That this increased destruction cannot be the sole factor in enhanced tolerance to the drug was shown by Rübsamen,[2] who found that after large injections of morphin, immune rats may still contain a quantity of undestroyed poison larger than the lethal dose for the normal individual of this species Cloetta[3] accordingly assumed that there must be a tissue immunity factor

Ordinarily, in these studies on the nature of increased tolerance, the behavior of the organism as a whole to the drug has been the subject of observation The specific physiologic functions involved in the action of morphin are, however, quite manifold It has seemed desirable, therefore, to investigate the problem of enhanced tolerance in relation to several of these functions separately in the hope of throwing new light on the problem The respiration is one of the bodily activities peculiarly responsive to morphin[4] This drug may, for example, exhibit an unmistakable effect on breathing after the administration of doses far too small to produce the more characteristic profound narcosis In the pharmacologic institute at the University of Utrecht, van Dongen[5] has found that it is actually possible to accustom the respiratory center to morphin The tolerance developed was complete, even to a dose 1,800 times as large as that to which the breathing function was initially responsive The nervous centers concerned in the characteristic dilatation of the pupils under the influence of morphin are also shown to be entirely immunized to the action of the drug in tolerant dogs Other centers are not so easily affected, thus the gastric manifestations are not so readily dispelled by the development of a general tolerance The vagus center, in fact, seems to be unaltered in responsiveness, despite the exhibition of pronounced immunity in other functions Even in dogs with marked tolerance for morphin, a slowing of the pulse is manifested with every dose of the drug

It thus becomes evident that different functions or different centers of nervous response exhibit increasing immunity to morphin with unlike readiness Even such structures as the vomiting center, the respiratory center and the vagus center, all of which lie near to each other anatomically in the spinal bulb, show a different behavior in the course of the development of tolerance The relative readiness with which they become unresponsive by no means corresponds with their comparative sensitiveness to the drug in the unhabituated organism In the judgment of van Egmond[6] and van Dongen,[5] all of the facts cited confirm their conclusion that the older theory of augmented oxidative capacity in the body will no longer suffice to explain the phenomena of tolerance to morphin We must further postulate a specific tissue immunity that is acquired in unequal degree and with unlike readiness by different organs and centers of the body[7]

THE RIPENING OF APPLES

Fruits are entering into the dietary of man in this country more largely today than ever before It therefore becomes important to learn the details of their composition and to ascertain the best conditions under which they can be marketed for use as food That fruits, like many other plant products, are not suitable for human consumption until they have reached a certain stage in growth, termed ripeness, is known to all In some cases this corresponds with the period at which the fruit is harvested It is less well realized, however, that there are many fruits which reach the proper edible stage only after a longer or shorter period of storage following removal from the parent plant

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[1] Faust E. S Ueber die Ursachen der Gewöhnung an Morphin Arch f exper Path. u. Pharmakol, 1900 xliv 217

[2] Rubsamen W Experimentelle Untersuchungen über die Gewohnung an Morphin Arch f exper Path u. Pharmakol 1908 lix 227

[3] Cloetta M Ueber das Verhalten des Morphins im Organismus und die Ursachen der Gewohnung an dasselbe, Arch f exper Path. u Pharmakol 1903 L, 453

[4] The Opium Alkaloids and Respiration, editorial, THE JOURNAL A. M. A., Feb 12 1916 p 514

[5] Van Dongen K. Beitrage zur Frage der Morphingewöhnung Arch f d ges Physiol, 1915 clxii 54

[6] Van Egmond A. A. J Ueber die Wirkung des Morphins auf das Herz Arch exper Path u Pharmakol 1911 lxv 197

[7] In translating these facts and views into a general theory applicable in all cases it must be borne in mind that not all animal species exhibit the phenomenon of acquired tolerance to morphin Among laboratory animals the rabbit forms a notable exception, according to van Dongen

As a rule this later ripening involves a decrease in acid and starch along with an increase in sugar content Oxidation processes also go on in the fruit, with the development of those special substances, possibly esters in some cases, which furnish the peculiar aroma or flavor of the individual species The banana, picked green, exhibits a conversion of starch into sugar as the fruit subsequently ripens This change is attended by a sort of respiration process, for it does not go on normally in the absence of oxygen The peach, on the other hand, contains no appreciable amount of starch at any time, but shows a steady increase in sugar content as it approaches maturity[1]

Although the apple is easily the most important of the fruits of its class, there is little widespread information in regard to the chemical changes which attend its ripening The starch content reaches a maximum in midsummer while the fruit is still on the trees, and then begins to decrease Some varieties of apples are ready to eat when they are removed from the trees The larger number, however, are expected to ripen to a considerable extent after that period For this reason, the varieties which mature more slowly exhibit a superior keeping quality When once the ripening process has been completed, the fruit tends to become soft, mushy or overripe, and usually at this or some preceding stage, organisms of decay gain entrance to the tissues, and the fruit rots In the absence of infection with any germs of disease or decay, the fruit loses water and shrivels up into a withered dry mass Changes of this character go on, no matter whether the fruit remains on the tree or is picked off Growth ceases, and chemical changes ensue which result in the development of characteristic odor and flavor and later in the disintegration of the flesh of the fruit

The object of the storage or preservation of fresh fruit so that it will be available beyond its natural "season" is really to slow up the ripening process and so to prolong its period as much as possible That temperature has an important influence on the rate of ripening is a familiar experience Beyond this little has been appreciated in regard to the changes actually involved It has even been believed that micro-organisms are in part responsible, though in the light of our modern knowledge of biochemical changes in plants it is more reasonable to ascribe an influence to the presence of "ripening enzymes"

With respect to the actual changes in the chemical composition of ripening apples, Bigelow, Gore and Howard[2] have found a slight but continuous decrease in total acidity, a gradual decrease in sucrose, a gradual increase at first, followed by a later slight decrease, in invert sugar and total carbohydrates, and the disappearance of starch early in the ripening process At the University of Minnesota, Thatcher[3] has concluded that the only enzymes which participate in the changes in the carbohydrates of apples during the ripening process are oxidases None of the common types of carbohydrate-splitting enzymes could be found The fact that the changes which take place during ripening are inhibited by surrounding the fruit with an atmosphere of carbon dioxid is easily explained on the basis of their being oxidase changes, since it is a well-known fact that the presence of a large excess of the end-products of a reaction generally inhibits the action of the accelerating enzyme in increasing degree as the proportion of the end-product increases Carbon dioxid is undoubtedly an end-product of oxidase activity, and should therefore accomplish just the result which was found to occur With such facts regarding the "respiration" of ripening available, it is not unlikely that they may later be applied in addition to current methods of cold storage to the problem of conserving one of the most valued foods that enters into the human dietary both in health and in disease

A MECHANISM OF PROTECTION AGAINST BACTERIAL INVASION

"The mere fact that both animals and man are in constant contact with infectious micro-organisms, many of them in a high state of virulence, indicates in itself that the individual disposes normally over a defensive mechanism of considerable efficiency" These words, from a recent volume,[4] express a situation which has long been the subject of speculation and experiment Of course, the sound, healthy skin and the mucous membranes ordinarily offer an effective resistance to the entrance of micro-organisms into the interior of the organism But even when organisms have succeeded in invading the tissues themselves, a second line of defense is ordinarily encountered which tends to inhibit the further progress of the germs more or less perfectly Here the active forces reside in the phagocytic power of leukocytes and other cells and further in the bactericidal or antibacterial action of the body fluids The latter process is commonly conceived to be disintegrative in nature, so that some form of bacteriolysis ensues

The study of the antibacterial powers of the blood leaves no doubt that certain micro-organisms can be dissolved by lysis in the presence of appropriate serum The question of the relative importance of the phagocytes and the "humoral" factors present in the blood in the phenomena of protection against bacterial infection has been warmly debated Zinsser has remarked that in the prolonged controversies between the adherents of the two schools, waged with great astuteness and experimental skill, most of the facts which we possess regarding immunity were discovered It has long been known that when bacteria are introduced into the blood and later disappear from it they are not eliminated by the organs of excretion but are destroyed in the tissues themselves In considering the problem of the manner of the destruction, Bull[5] remarks that the dissolution of bacteria by lysis has been observed, but not in the living body Only a part of the pathogenic bacteria, of which *Bacillus typhosus* may be taken as an example, experience solution in shed blood or its serum constituents, whereas such bacteria as pneumococcus and streptococcus are not subject to this form of dissolution

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[1] Sherman, H C Food Products, New York, the Macmillan Company, 1914, p 343

[2] Bigelow, W G, Gore, H C, and Howard, B J Studies on Apples, U S Dept Agr, Bur Chem, Bull 94, 1905, pp 100

[3] Thatcher, R W Enzymes of Apples and Their Relation to the Ripening Process, Jour Agric. Research, 1915, v, 103

[4] Zinsser, Hans Infection and Resistance, New York, the Macmillan Company, 1914

Protection from certain forms of bacteria can be secured by the employment of immune serums An active pneumococcus serum, for example, protects against a certain maximum quantity of pneumococcus culture The immediate effect of the serum injection is to cause the disappearance of the pneumococci from the circulating blood, this result being produced in the incredibly short period of a few minutes The experimental investigations of Bull at the Rockefeller Institute of Medical Research are believed to throw some light on the mechanism of the removal He maintains that an almost immediate agglutination of the bacteria takes place. The larger the doses of the serum, within limits, the larger the size of the bacterial clumps that are found The clumps are removed from the blood almost immediately by the organs — the spleen, liver and bone marrow What happens next is determined by the size of the clumps If they are large, they cannot be ingested by phagocytes, hence they soon begin to multiply, and the bacteria reinvade the blood, if small, they are taken up by phagocytes and are digested The animal succumbs in the first case and survives in the second Hence small doses of the serum causing smaller clumps may be more effective than large doses giving larger ones No extraphagocytic dissolution of the pneumococci seems to occur A similar mechanism is reported to operate in animals inoculated with cultures of the typhoid bacillus, although this organism is subject to serum lysis

In cases of certain cultures of disease-producing bacteria like two distinct varieties of the influenza organism which may or may not be pathogenic, Bull asserts that the pathogenic effect may depend on the agglutinability of the bacteria by the blood whether of normal or immunized individuals Thus when cultures of the nonpathogenic variety are injected into the circulation of rabbits, they are clumped and removed by the organs at once, when cultures of the pathogenic variety are inoculated, they are neither clumped nor removed

According to this view of Bull, agglutination, the property of immune serums discovered soon after the finding of specific bacteriolysins, is a most important feature in the mechanism of protection As he expresses it, bacteria circulating in the blood are quickly removed when they are agglutinated or clumped, and the clumps deposited within the organs are taken up by phagocytes and digested They appear not to be destroyed by solution or lysis through the operation of serum constituents of the blood In other words, in some cases of protection from bacterial invasion, no extraphagocytic dissolution or bacteriolysis of the micro-organisms seems to occur

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[5] Bull, C. G A Mechanism of Protection against Bacterial Infection Proc. Nat Acad Sc., 1915 i 545

Current Comment

THE FUNCTION OF THE PERICARDIUM

The structure of the pericardium as a tough, fibrous membrane, within the cavity of which the heart and roots of the great vessels lie almost free, suggests that its function may be to assist in checking an excessive dilatation of the heart during conditions attended by a great rise of venous pressure The overfilling of the heart is of course prevented in part by the resistance of its own walls Barnard[1] has shown that the pericardium not only is inextensible but also can bear an internal pressure of more than one atmosphere, a force by which the heart invariably is ruptured That the pericardium may even ordinarily exercise some restraint on the organ within it is suggested by the easily made observation that the heart during diastole tends to protrude through a slit made in the encasing membrane In fact, the right auriculoventricular valve may cease to be entirely efficient when the pericardium has been freely opened, the closure of this valve seeming to be somewhat dependent on the support afforded to the heart by the pericardium By the aid of ingeniously devised experiments at the Institute of Physiology, University College, London, Kuno[2] has observed that in the absence of the pericardium it is difficult to increase the work of the heart above its usual performance without danger to the organ When the pericardium is intact the heart may be exposed to too large a venous inflow for a considerable time without undergoing serious damage, the only effect being to weaken its action somewhat When, on the other hand, the heart has been overdistended by too large a venous inflow in the absence of the usual pericardial restraint, not only does insufficiency rapidly manifest itself, but also signs of permanent damage ensue, so that the maximal cardiac performance can never again be brought to the same level In a variety of ways the existence of the pericardium has been shown by Kuno to be necessary for the unimpaired working of the heart in normal life The disturbance of the heart in the absence of the protective membrane does not end with the usually manifested functional irregularity of the heart beat which may occur in a variety of forms Such mechanical or physiologic consequences are followed by pathologic changes wrought by the overdistention Valvular insufficiency, especially of the auriculoventricular valves, is a common occurrence when there is extreme distention Additional injury is evidenced by the consequent ruptures of the heart muscle and the hemorrhages which may be found in the outer and inner layers of the heart wall As a rule they make their appearance when the strain of the heart is approaching its maximal working capacity, and are especially frequent in the inner wall of the left ventricle, over the whole surface of the heart and in the septum Such a story of valvular inefficiency, hemorrhage and irregular action is thus sufficient to indicate the beneficent advantage of an intact pericardium as a factor of safety when the work of the heart is increased, as it often must be, above its normal level

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[1] Barnard Proc. Physiol Soc., Jour Physiol. 1898 xxii p xliii
[2] Kuno Y The Significance of the Pericardium, Jour Physiol, 1915, p 1

HENRY BAIRD FAVILL

Dr Henry B Favill, whose obituary appears elsewhere in this issue, was an unusual man As a physician he represented modern scientific medicine, and his practice was large He took active part in the work of local, state and national societies, and when he discussed scientific medical questions he was listened to as one speaking with authority However, while his interest in medicine was great and his practice large, his interest in social questions and in public welfare was so extensive as to make his medical work seem almost incidental As a citizen of Chicago he was intimately identified with those forces which are seeking to bring about purity and efficiency in public works and service He was one of the moving spirits in the organization of the City Club — an institution which has done much to bring about better conditions in Chicago He did effective work as chairman, and executive officer, of the Municipal Voters' League of Chicago, which position he occupied for three years During that time he naturally made many enemies, but in spite of the attacks made on him by ward politicians and others, he emerged from this work with reputation unspotted He was a man of altruistic ideals, but at the same time was practical he attacked all problems with a broad conception of humanity and its weaknesses With absolute unselfishness, he accepted leadership in many movements which he knew would bring on him attacks by those injured As chairman of the Council on Health and Public Instruction, his advice was regarded as that of a man who looked at the problems not alone from the viewpoint of the physician, but also from that of the publicist As the Chicago *Herald* said, "No class was big enough for him His interest and his service belonged to all groups The mere recital of the agencies and organizations which he touched indicates something of the generosity of his outlook He was a pioneer in public health betterment, in civic reform and in social readjustment He was a forerunner in the creation of the new conscience" We need more of the spirit that controlled Dr Favill in his activities, he stood for the ideal that the responsibilities of citizenship rest more on the medical profession than on any other class

THE STIMULATION OF MAMMARY DEVELOPMENT

The scientific evidence regarding the possible factors responsible for the development of the mammary glands to a condition in which they are competent to function as milk-secreting organs was discussed in The Journal[1] some time ago The phenomenon of the genesis of lactation is of such fundamental importance for human welfare as well as animal existence that it inevitably provokes interest and speculation What subtle influence prepares the rudimentary tissue so ideally for its evolution into an active gland at the proper time and only under the circumstances connected with an expected parturition? The development of experimental technic, particularly in the field of transplantation of tissues, has greatly facilitated investigation of this subject It will be recalled that the physiologist Steinach transplanted ovarian tissue into young male rats and guinea-pigs which had previously been castrated The mammary glands and the nipples always present in rudimentary form in every male thereupon began to develop and presently exhibited feminine characteristics In some cases the hypertrophied glands actually appeared capable of functioning in the usual manner These surprising and significant observations have lately been repeated in the physiologic laboratory of the medical faculty at Lisbon by Athias[2] They show anew that the development of the mammary gland is influenced by a "hormone" elaborated from ovarian tissue A comparable influence emanating from other tissues that might be expected to participate in this cycle, namely, the placenta and uterus, has not been thus clearly demonstrated The presence of these organs along with the fetus, therefore, by no means appears indispensable for the genesis of mammary functions, if they can be so readily provoked in the castrated male The facts cited do not imply that other agencies are without any significance in modifying the activity of the gland, it is rather the capacity for performance — the development of an efficient mammary organ — which can be brought about through indirect ovarian influences Athias suggests that perhaps a residue of maternal ovarian products in the circulation of the new-born may account for the well-known secretion of "witches' milk" in the infant

DISCOVERY OF THE CAUSE OF WEIL'S DISEASE

Acute epidemic or infectious jaundice, commonly designated as Weil's disease, is so infrequently observed that it has not previously been the object of extensive study Although bacteria of the proteus group have been found so frequently in association with this disease that they were at one time thought to be the cause, subsequent investigation eliminated them as the specific cause, although the possibility of an associated rôle remained Recently independent investigations have shown that improved methods were adequate to elucidate the problem Results reported by Hübener and Reiter[1] and Uhlenhuth and Fromme,[2] who have been working simultaneously and independently on this disease, establish the ready transmissibility of this disease to laboratory animals, the guinea-pig being especially susceptible Mice and rats are not susceptible, and this fact has an important bearing on the epidemiology of the disease It is not spread from infected to normal animals living with them Immune animals are refractory, and their blood contains antibodies The virus is filterable through Berkefeld filters In the tissues and blood of infected animals, Hubener and Reiter have found constantly spirochetal organisms, which are especially abundant in the liver in accordance with the predominance of the changes in that organ during the disease in man These spirochetes seem to show unusual variability in form, there being no constancy in their morphology Hence they are quite distinct from the *Spirochaeta pallida* Often they show swellings and nodules, and the name *Spirochaeta nodosa* is proposed for them At the Christmas meetings of the Society of Experimental Pathology, Noguchi reported his study of infectious jaundice in Japan, where the disease seems to have the usual characteristics of Weil's disease Other Japanese observers had demonstrated the transmissibility to laboratory animals, filterability of the virus, and the presence of spirochetes in the tissues, which observations were confirmed by Dr Noguchi Hence it would seem that the causative agent of this disease has been discovered independently in Japan and Germany This should afford much assurance as to the certainty of the fact, although perhaps it opens the way to controversies concerning priority

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[1] The Physiology of Lactation, editorial The Journal A M A, March 2, 1912, p 638, Virgin Lactation, March 23, 1912, p 860

[2] Athias L'activité sécrétoire de la glande mammaire hyperplasiée, chez le cobaye male chatré, consécutivement à la greffe de l'ovaire, Compt rend Soc. de biol, 1915, lxxviii, 413

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[1] Hubener and Reiter Deutsch med Wchnschr Oct. 21 1915 ibid, Jan 6, 1916

[2] Uhlenhuth and Fromme Med Klin Oct. 31, 1915

Safety Congress

The National Safety Council has just issued a report of its fourth annual safety congress, held at Philadelphia, Oct 21, 1915 C W Price, assistant to the Industrial Commission of Wisconsin, was chairman Representatives from many of the large industrial concerns of the United States were present, and an outline of the safety methods and organization of safety work in each of the industries represented was given, followed by discussion There does not seem to be any general standard or uniformity of organization, each plant having worked out its own plan In most of them, however, workmen's committees assisted in the propaganda of individual safety and greater care as well as care for the safety of fellow workmen The discussion has been printed in a pamphlet which may be had from the chairman It contains many valuable suggestions in regard to the factory safety movement.

In this connection, the Department of Labor and Industry of Pennsylvania, John Price Jackson, commissioner, issues a series of four- or eight-page pamphlets in regard to accidents and disease in the factory, bearing such titles as "Timely Hints to Employer and Employee", "Timely Hints to Elevator Operators", "Timely Hints for Steam Boiler Firemen and Attendants", "Timely Hints for Employees in Mercantile Establishments", "Timely Hints for Painters," for printers, etc. They warn against the dangers of each occupation and give suggestions for the prevention of accidents and the avoidance of the diseases of the particular occupation They will help in the safety movement.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education, public health, etc)

ARIZONA

State Association Names Counsel.—To complete the plans of the Arizona State Medical Association for medical defense in the state, Leroy Anderson, an attorney of Prescott, has been appointed official counsel for the organization

Work of State Laboratory—In 1914-1915, the state laboratory examined 386 out of 461 collected samples of foods, drinks, flavoring extracts, condiments, water, etc Of these, 268 were commercial samples of foods, etc, of which seventy-six, or 28 4 per cent, were found to be adulterated or misbranded, or both Many of these goods were manufactured or prepared outside the state and dealers had legal guaranties on them, so that under the Arizona food laws prosecutions could not be instituted Outside dealers were in all cases informed and warned concerning the violations Considerable improvement has been made in the importation of illegal goods

CALIFORNIA

Lepers Escape from Hospital.—Two lepers escaped, February 3, from the Los Angeles County Hospital after severely beating two trusties, also lepers, who were on guard duty

Lane Lecture—The second of the series of popular medical lectures to be given under the auspices of the medical faculty of Leland Stanford Junior University took place at Lane Hall, San Francisco, January 29 Prof M S Wildman of Stanford University spoke on "The Economic Aspect of Disease"

Charts Illustrating Death Rates—Mr John H Mellon, secretary of the Health Department of Oakland, has recently prepared a series of charts illustrative of the death rate in that community The charts are devoted to tuberculosis, annual birth and death rates, deaths from various diseases, and a special chart on typhoid cases reported by months

Personal.—Dr Herbert S Anderton, San Francisco, was slightly injured, January 23, when his automobile skidded and crashed into a telephone pole——Dr Wilbur A Sawyer, Berkeley, secretary of the state board of health, attended a conference of physicians and social workers at San Antonio, Texas, February 5, at which he was the guest of honor at a luncheon given by the executive committee of the Southwestern Conference on Tuberculosis——Dr Frank B Cohn, resident physician at the Emergency Hospital, Oakland, has resigned, and Dr H E Franck has been appointed his successor——Dr Shadworth O Beasley San Francisco, has returned after war service in Serbia—Dr Louis D Green, San Francisco, returned from a trip to Amritsan, India, January 25

DISTRICT OF COLUMBIA

Speak and Testify in Washington.—Dr John R. Williams, Rochester N Y, delivered an illustrated address before the George Washington University Medical Society, February 19, on "Recent Developments in the Study and Treatment of Diabetes Mellitus"——Prof Charles Wardell Stiles, U S P H S talked to the Cosmos Club, on February 14, on "Some Medical Aspects of the Race Question in the South, with Special Reference to the Hookworm"——Drs Isadore Dyer, New Orleans, La, Henry M Bracken, St Paul, Howard Fox, New York, and Frank H Parker, superintendent of the Massachusetts Leper Colony, at Penikese Island, Mass., were in Washington, February 14, to testify before the Senate Committee on Public Health and National Quarantine concerning the proposed national leprosarium

ILLINOIS

Scarlet Fever—The state board of health is making strenuous efforts to prevent a widespread epidemic of scarlet fever following an outbreak of 100 cases in the Military Academy at Alton The school authorities sent the 200 students to their homes after many of them had been exposed to infection

State Hospitals Association Meet.—The Illinois State Hospitals Medical Association met at the Jacksonville State

Hospital, February 24 and 25, and discussed institutional diversions, reeducation of the demented, the Wassermann reaction in the feebleminded, the treatment of general paralysis of the insane, arteriosclerosis of the brain and cord, diphtheria carriers, alcoholic psychoses, and anociassociation

Personal—Dr William L Kreider, Prairie City, one of the oldest practitioners of McDonough County, is critically ill as the result of a cerebral hemorrhage, February 11——Dr George P Gill, Rockford, who has been serving with the British Expeditionary forces in France, arrived in Boston, February 11——Dr Clarence M Cheadle, Rockford, reached New York, February 11, after several months' service in Serbia

Baby Week—Baby Week is to be observed throughout Illinois, March 4 to 11, and Baby Health Conference Week, May 8 to 12 The outline of work for the week, as suggested *by the state board of health, is as follows*

Saturday, March 4 Inauguration Day Opening of headquarters of Baby Week Organization Mass meeting addresses by Mayor or health officer and representative of Baby Week Organization Distribution of helpful literature, etc

Sunday, March 5 Baby Sunday Appropriate sermons in all churches in morning, address by competent medical men from pulpits in evening Carefully prepared articles in Sunday newspapers, suitably illustrated

Monday, March 6 Little Mothers' Day Talks and demonstrations on care of baby and its surroundings to school, to school girls of above sixth grade, by competent nurses or physicians Inspection of schools and surroundings

Tuesday, March 7 Fathers' and Sons' Day Suitable talks to men and boys by physicians fully competent to handle the subject

Wednesday, March 8 Mothers Day Suitable talks to women ranging from parental care to adolescence As a special mark of respect to mothers, all men and boys might be asked to wear some white flower throughout the day

Thursday, March 9 Demonstration day Special demonstrations of baby bathing, dressing, sleeping and feeding, including home pasteurization home care of milk, and modified cow's milk, sample meals for older children, suitable exercises for children, out door sleeping, home and community sanitation, exhibits, motion pictures, etc

Friday, March 10 Community Day Get together meeting of officials and citizens, plain talks on duties of citizens and officials, presentation of petitions for civic improvements and hearing of thereon Conference with milk dealers and food handlers Special plea for birth and death registration and for enforcement of rules governing contagious diseases

Saturday, March 11 Permanent Organization Day Joint meeting of executive committee and active workers for Baby Week Plans for future, including Baby Health Conference Week, May 8 12 Permanent organization of Child Welfare Society with appointment of committees about as follows Executive Committee, Committee on Baby Health Conference Week, including in membership physicians appointed by *county medical society*, Committee on Clean Up *Campaign*, with sub committees on Fly and Mosquito Extermination, Committee on Inspection of Dairies and Food Handling Establishments, Committee on Law Enforcement

Sunday, March 11 Review Day Summary of work accomplished during Baby Week and plans for future activities to be subject of talks from pulpit *Review to be published in Sunday newspapers*

The organizations engaged in preparing programs for Baby Week have been asked to incorporate in their programs the subject of the Conference Week The baby health conferences are more scientific in character than the more familiar better baby contest They are calculated to serve as practical demonstrations of the service of infant welfare stations or clinics and to impress on visitors the importance of establishing such stations For these conferences the standard score card for babies and the anthropometric table issued by the American Medical Association will be employed in determining the mental and physical status of each child submitted for examination The Illinois State Board of Health will supply for these conferences, on request, pamphlets on "How to Organize a Baby Health Conference", "How to Score Children by Scientific Methods," standard score cards for babies, anthropometric table for male and female children, and a booklet on "Our Babies—How to Keep Them Well and Happy"

Chicago

Smallpox at County Hospital—Eight cases of smallpox have recently occurred at the Cook County Hospital Five wards have been put under quarantine and wholesale vaccination has been practiced

Lepers in Chicago—Physicians, nurses and others who testified before the Senate Health Committee, February 15, in support of a bill to establish a national leprosarium, stated that there were about eighty lepers free in Chicago

Personal—Dr William M Thompson was slightly injured and his automobile was demolished in a collision with an automobile truck, February 14——Dr Fred W Moeller reached Boston, February 11, after service in the war zone

Typhoid Due to January Flood—The department of health has traced thirty-six cases of typhoid fever to the water supplied by the Sixty-Eighth Street pumping station and all living south of Twenty-Second Street have been warned to boil the drinking water The infection is believed to have been due to the overflowing of the sewers during the January floods

KENTUCKY

Vaccination—Dr Jesse I Whittenberg, Louisville, health officer of Jefferson County, has been informed by the attorney for the school board of Highland Park that the board will no longer resist the order requiring vaccination of the pupils in the schools of Highland Park, a suburb of Louisville

Quarantine Against Illinois—The Kentucky Live Stock Sanitary Board, on January 31, established a quarantine against all cattle, sheep and other ruminant animals and swine originating in Illinois, north of the south boundary of Jersey, Macoupin, *Montgomery, Shelby, Cumberland* and Clark counties

Henderson County Sanatorium—Henderson County has almost completed the first sanatorium to be established in the state under the new law It has cost about $20,000, and consists of a central or administration building of brick, and two frame wards for the housing of patients Advanced cases of tuberculosis will be quartered on the second floor of the administration building

MAINE

Personal—Dr Stanwood E Fisher, Portland, has been elected a member of the city government——Dr William C Whitmore has been elected city physician of Portland——Dr Charles M Sleeper, South Berwick, has been appointed collector of customs for the district of Maine

State Antituberculosis Association Meeting—Dr William C Peters, Bangor, has been elected president and Dr John E Wadsworth, Skowhegan, a vice president of the Maine Antituberculosis Association The association has voted to ask the legislature for an appropriation of $4,000 for the 1917-1918 biennium

MARYLAND

Personal—Dr John C Hemmeter has been elected a Fellow of the Royal Society of Arts of England, in recognition of his work on diseases of the stomach——Dr Harry F Shipley, Granite, is a patient in Mercy Hospital, suffering from a general breakdown, and is reported to be progressing favorably

Infant Mortality Probe—The federal Children's Bureau has started an investigation to ascertain the cause of the death rate among infants in Baltimore. The mortality every year reaches about 2,000 Twelve agents who have had special training will undertake the investigation, and have obtained from the health department statistics concerning every baby born in Baltimore during 1915, each one of whom will be visited Miss Emma Lundberg, child welfare expert of the federal bureau, is directing the investigation

Doctors Protest—At the meeting of the Baltimore County Medical Association, held at the Mercy Hospital, Baltimore, a resolution attacking a bill which will be introduced into the legislature was unanimously adopted This bill prohibits any physician, except those duly qualified by law, from compounding medicines *An exception is made in* the bill for cases of emergency The association also went on record as approving the bill appropriating for two years the sum of $25,000 a year to the University of Maryland School of Medicine (and College of Physicians and Surgeons)

Appropriation for Public Athletic League Requested—An appeal for an appropriation of $15,000 for each fiscal year was made to the General Assembly of Maryland on behalf of the Public Athletic League, by Dr William Burdick, director of the league The work of the league among the boys and girls of the state has so increased that the $4,000 annually which the last legislature gave is not sufficient to meet requirements It is generally recognized that the bill is a worthy one and that the league is doing a splendid work for young people, in developing their characters as well as their bodies It has gradually extended its work until most of the public schools in the city and the more thickly populated sections of the counties have been reached In the last fiscal year of the league, its revenues amounted to about $30,000 Of that sum, the state gave $4,000, Baltimore, $6,000, private institutions benefiting by its work, $5,000, and individuals interested in the league, $15,000

MASSACHUSETTS

Contributions for Surgical Dressings—The total contributions to the Boston Surgical Dressings Committee up to February 2 was $18,722

New Tuberculosis Hospital—The new hospital for tuberculosis on Newton Street, Brookline, has been completed at a cost of $38,000, and is open to receive patients The main building is two stories in height, with a one-story wing on either side, and will accommodate about twenty-five patients

Health Service Merger—Surg Allan J McLaughlin, U S P H S., state health commissioner, has recommended to the special committee on commission consolidation that the medical inspection service of the State Board of Labor and Industries be transferred to the control of the health department

Personal.—Dr Stanley C Cox, Holyoke, has been appointed associate medical examiner for the Holyoke district.——Dr John F Fennessey has been appointed a trustee of the Boston State Hospital, and Dr William L Richardson a trustee of the Perkins Institution and Massachusetts School for the Blind——Dr Henry S Forbes, Boston, who has been engaged in Red Cross work in Serbia for several months, has been released after three months' detention at Monastir, and is en route to Sofia——Dr Bernard W Carey has been appointed a member of the Fitchburg Board of Health

MICHIGAN

Personal—Dr Herman Ostrander, for twenty-seven years a member of the medical staff of the Kalamazoo State Hospital, has been appointed medical superintendent of the institution, succeeding Dr Alfred I Noble, deceased, and Dr George F Inch, who has been connected with the institution for seventeen years, has been made assistant medical superintendent——Dr Alvin H Rockwell has retired as city health officer of Kalamazoo, after seven years' service——Dr J Howard Van Ness has been appointed local surgeon of the Michigan Railway Company at Allegan

Public Health—The January bulletin of the Michigan State Board of Health, *Public Health*, is of formidable size for a state board bulletin, containing fifty-nine pages There are eight original papers on public health topics, three of them on syphilis Governor W N Ferris discusses "The Black Plague", Dr Arthur F Fischer, Hancock, has a paper on What Venereal Disease Means," and Dr Andrew P Biddle, Detroit, one on "Syphilis as a Social Factor" Other papers are on Home Ventilation," "Physical Training for Busy People," "Who Goes Footloose," "How Results are Obtained in Michigan's Antituberculosis Campaign," and one by Dr Hugh H Young, Baltimore, on "Cancer of the Genito-Urinary Organs" Financial, laboratory and communicable disease reports, editorials and abstracts make up the remainder of a very interesting number

MISSISSIPPI

Fraudulent Canvassers and Collectors—See item under 'General News" of this issue, page 666

Health Survey Planned—The matter of a health survey for Columbus has received favorable consideration from the United States Public Health Service, which will make a health survey of Columbus and vicinity during the present year

Pellagra in Mississippi.—The State Board of Health of Mississippi has had prepared for presentation to the state legislature a statistical report of pellagra in Mississippi and suggestions to the legislature relative to its prevention and cure. The statement has been prepared by Dr Frank L Watkins, Jackson, deputy registrar of vital statistics It is shown that during 1914, the death rate from pellagra was 47 per cent greater than for 1913, and the number of cases for the first eight months of 1915 was 46 per cent greater than for the year 1914 In 1914, the cost of the disease to the state was $2,880,111 In 1914, there were reported to the state board of health 10,954 cases of pellagra, 7,897 cases of tuberculosis and 6,159 cases of typhoid fever The unbalanced diet theory of the causation of pellagra is accepted in the report, and it is believed to be the duty of the legislature to make provision for the alleviation of the condition It is the opinion of the state board of health that the state should assume the responsibility of educating the people, and that counties should make provision for the treatment of those suffering with pellagra The creation of a central institution by the state for the care of pellagrins is believed to be impracticable The following suggestions are made The legislature should make an appropriation of $30,000 per annum for the next biennial period, exclusively for pellagra work, provision for a sufficient number of field men to carry on an educational campaign, the education of the pupils in the public schools as to the cause and cure of pellagra, the agricultural department should encourage the keeping of milch cows and poultry and the growing of beans and peas, and also advise with regard to improving economic conditions, the state board should supply literature on pellagra, counties should be granted power to establish camps for the treatment of pellagra, all work should be under the direct supervision of the state board of health and the U S Public Health Service should be asked to supervise the educational campaign, to demonstrate preventive methods in one or more communities, etc.

MONTANA

Deaconess Hospital Assured—A committee of the Methodist Church which is in charge of the Deaconess Hospital project, Miles City, announces that the plans for the new institution are making satisfactory progress and that the construction will become a reality in the near future

Personal.—Dr George H Putney, Ronan, has located at Great Falls——Dr Clarke S Smith has returned to Bozeman after six months' service in war hospitals in northern France——Dr Richard B Durnin has been elected representative of the Cascade County Medical Society in the Great Falls Commercial Club——Dr James F S Marshall, Stevensville, has left for Calgary, Alta, where he will take up his work as a member of the Canadian Army Medical Corps

NEW JERSEY

Personal.—Health Officer Edwin H Coward and Dr Edward J Porteous, Atlantic City, and Dr Myrtile G Frank, Egg Harbor City, have been appointed directors of the new Atlantic County Tuberculosis Hospital——Dr Robert M Curts, Paterson, is reported to be critically ill at his home

Tuberculosis—The *Weekly Bulletin* of the Newark Department of Health gives some interesting figures concerning tuberculosis in the city during 1915 It is said there were 834 deaths from all forms of tuberculosis They were classified as follows pulmonary tuberculosis, 723, miliary, 20, tuberculous meningitis, 63, tuberculous peritonitis, 11, tuberculous disease of the hip, 2, of other parts of the body, 3, general tuberculosis, 3 This shows that about seven eighths of the deaths were due to pulmonary tuberculosis Of the total deaths from this cause, 482 were males, 241 females, fourteen deaths occurred at ages under 15, forty-seven at ages 15 to 19, sixty-eight at ages 20 to 24, 102 at ages 25 to 29, seventy-four at ages 30 to 34, 108 at ages 35 to 39, ninety-four at ages 40 to 44, seventy-five at ages 45 to 49, fifty-five at ages 50 to 55, thirty-two at ages 55 to 59, forty-two at ages 60 to 84, in twelve the age was not stated

NEW YORK

Rosenau at Buffalo—Prof Milton J Rosenau of Harvard University will deliver the Harrington lectures at the University of Buffalo Medical School during the Alumni Reunion, May 30, 31 and June 1 The subjects will be as follows two lectures on "Anaphylaxis" and one on "Education for Public Health Service as a Career"

Buffalo Alumni Catalog—The alumni association of the Medical Department of the University of Buffalo has issued a catalog of the medical alumni which gives a list of the names of graduates since the foundation of the university in 1846 together with the graduates of Niagara University from its foundation in 1886 until its amalgamation with the University of Buffalo

For New Insane Asylum.—A bill is before the legislature authorizing the sale of the Mohansic State Hospital site and urging that the proceeds be used for the purchase of another site and the erection of a hospital for the insane near New York The state hospital commission for the insane states that this step is imperative because of the present overcrowded condition of the state hospitals The capacity of the fourteen state hospitals at the present time is 27,840 and there are 6,484 more patients housed than can be properly accommodated

Four Doctors to do the Work of Ten—The City Council of Buffalo, on February 4, decided to report in favor of the appointment of four city physicians at a salary of $1,800 a year in place of ten physicians who have been looking after the indigent sick of the city, at a nominal salary It is proposed to have four health stations where the physicians are to have their headquarters from 8 30 in the morning until 2 o'clock in the afternoon, while from 2 to 4 o'clock they will be at dispensaries Their duties will be not only to answer sick calls, but to examine persons suspected of having tuberculosis, look after sick schoolchildren and inspect milk stations

Vaccination—John C Claus was convicted in Rochester of noncompliance with the vaccination law of the state and city ordinances, and fined $25 and costs in the police court Claus was tried once before on a similar charge The decision arising from the first trial of this case resulted in the formation of an antivaccination society in Rochester, of which Claus was made chairman Claus proposed to the health authorities that he would have his child vaccinated they would agree to be responsible for any serious consequences that might arise He sent his child, aged 7, to school every day, but on account of his refusal to have her vaccinated, she was sent home each time

Health Messenger—This is the name of a new publication prepared and printed within the schools of Albany under the supervision of Dr Clinton P McCord, health director of schools The first number is a neatly printed twelve-page pamphlet which contains the announcement of the purpose of the *Health Messenger*, which is, of course, the improvement of health conditions among the pupils of the city schools This is to be done each month by taking up in a practical way some subject of educational hygiene, a list of which is suggested in the *Messenger* This number starts with contagious diseases, giving school and health board regulations regarding such diseases, with suggestions to parents, school superintendents and teachers as to precautions to be taken and manner of handling children suspected of having the initial symtoms of the exanthemata, etc Other health suggestions and comment, together with messages from the commissioner of education, the state health commissioner, the president of the board of education and the superintendent of schools, and a cartoon help to make up the first issue of a promising experiment which is said to be new to the public schools of the country

New York City

Personal—Dr Parker Syms has been appointed visiting surgeon of the City Hospital, New York, and not of the City Hospital of New York, as announced in last week's JOURNAL ——Dr Charles F Sanborn has severed his connection with the Greenpoint Hospital, Brooklyn

Semicentennial of Health Department—The Metropolitan Board of Health will celebrate the semicentennial of its sanitary control of New York City and adjacent counties by a commemoration dinner to be given March 9 Among the speakers expected will be the mayor of New York, the State Commissioner of Health, Surg-Gen William C Gorgas, U S Army, Dr Walter B James, Mr Henry Bruere, and Dr Stephen Smith

No Danger in Cheap Furs—The sensational newspaper reports regarding the possible spread of anthrax by means of cheap furs has been the subject of an investigation by the health department According to *The Bulletin*, the cheaper furs in particular are submitted to a dressing and dyeing process which goes far to cleanse and disinfect them The alth department finds that the alarming reports as to the tiousness of cat fur have not as yet been confirmed by logic examinations The newspapers have reported vere fourteen deaths from anthrax during the past the records in the registrar's office reveal but n none of these was the victim a worker in

RTH CAROLINA

ngs Awarded—The directors of pital for the Insane, Raleigh, new receiving building and

au for the investigaality will be establreau of the federal ar The bureau will e Bradley

cksonville, has not been publican party, as erro-

L, but has been spoken of

—Dr David A Stanton,

his association with Drs John T Burrus and Hugh W McCain, in the High Point Hospital, for the care of surgical, gynecologic and chronic cases

NORTH DAKOTA

Board Can Enforce Vaccination—According to a written opinion by the attorney-general, a board of health has absolute power to enforce vaccination and to compel schoolchildren to remain home until they are vaccinated This opinion was written at the request of Dr Charles J McGurren, Devils Lake, secretary of the state board of health

OHIO

Home for Medical Society—Plans are being prepared for the construction of a building on Sixteenth Street, between Madison and Jefferson avenues, Toledo, to house the Toledo Academy of Medicine

District Association Meeting—The one hundred and sixty-eighth session of the Union Medical Association of the Sixth Councilor District was held in Akron, February 8 and 9 Lake Brady, Portage County, was selected as the next place of meeting, August 8 Dr William G Smith, Ravena, was elected president, and Dr John H Seiler, Akron, was reelected secretary-treasurer for the nineteenth term

Personal—Dr Charles E Sawyer, Marion, has been appointed a member of the state medical board to succeed Dr T Addison McCann, Dayton——Dr Robert C Longfellow, Toledo, has been elected an active member of the Society of American Bacteriologists——Dr Raymond E Whelan has been elected president, and Dr Nathan N Meyer, secretary of the medical staff of St. Elizabeth's Hospital, Youngstown——Dr Richard S Moynan, Columbus, sailed for Europe, February 7

Cincinnati

Personal—Dr Albert H Freiberg has been appointed a delegate to the twelfth annual conference of the National Child Labor Committee at Ashville, also as a representative of the Cincinnati Academy of Medicine on the Medical Defense Committee of the Ohio State Medical Association ——Dr Karl L Stoll is said to be held as a prisoner of war by the British in Edinburgh Castle Dr Stoll started for Germany, January 1, with the intention of joining the medical service of the German army

OREGON

Personal—Dr Archie K Higgs, Portland, has been appointed chairman of the committee of military, fraternal and industrial participation in Portland's annual rose festival

Gift to Medical College—A gift of $5,000 has been offered to the Medical College of the University of Oregon toward the construction of the first building, provided nine other similar subscriptions are secured

PENNSYLVANIA

Tuberculosis Cottage for State Hospital—Plans are being prepared for a one-story cottage building for tuberculosis patients in connection with the Norristown State Hospital The building is estimated to cost $42,000

Home Rule—West Sunbury is the one hundred and fortieth municipality in Pennsylvania which has come to the state department of health petitioning that it take charge of the borough, look after its sanitation, report, placard, quarantine and disinfect for contagious diseases The town council pledges itself to make prompt payment for these services

Personal—Dr Richard R Spahr, Mechanicsburgh, sails this month for Bordeaux as a member of the Pennsylvania unit——Dr W Frank Gemmill, Fawn Grove, is reported to be seriously ill with heart disease——Dr John A Fritchey, Harrisburg, is reported to be critically ill in a hospital in Philadelphia——Dr Elmer S Stambaugh, Thomasville, secretary of the York County Medical Society, is reported to be ill with inflammatory rheumatism——Dr Katrina Freudenberger, Tamaqua, was operated on for disease of the nose at the German Hospital, Philadelphia, January 13——Dr Alfred E Fretz, Sellersville, has been appointed surgeon of the Philadelphia and Reading Railroad in charge of the company's interests from Perkasie to Souderton——Dr Levi F Wagner has been elected prison physician of Reading

Philadelphia

Rush Society Lecture—The fourteenth annual Rush Society lecture and also the annual address before the Alpha Omega

Alpha Honorary Medical Society will be delivered at the College of Physicians, Twenty-Second and Chestnut streets, by Dr Richard P Strong of Harvard Medical School, on "An Investigation of Typhus Fever in Serbia"

John Morgan's Grave—The alumni of the Medical Department of the University of Pennsylvania have arranged to open the crypt of old St Peter's Church, Third and Pine streets, where Dr John Morgan, founder of the medical school and known as the father of medicine in America, is supposed to have been interred Drs Swithin Chandler, Clarence P Franklin, William Pepper and Albert D Ferguson, Provost J Fahs Smith, Philadelphia, and Sir William Osler have been appointed a committee to find the grave and to prepare a marker to be placed thereon

TENNESSEE

Medical Clinic—Contracts have been awarded for the construction of three rooms in the basement of the Municipal Building to be used for a free clinic The clinic, which will be under the charge of Dr Edward B Wise, Chattanooga, as chief of staff, will, it is expected, be ready to receive patients March 1

Tobacco Chewers Not Protected—The Supreme Court of Tennessee, according to *Commerce Reports,* has decided that tobacco is not a food, and therefore does not come within the scope of the decisions that manufacturers of drugs and foodstuffs are liable to consumers who purchase such articles from dealers for injury resulting from negligence in allowing foreign substances to be introduced into them during the manufacturing or packing processes

WASHINGTON

Washingtonians on War Service—Dr Eugene Hurd, Seattle, is now chief surgeon of the Twenty-Ninth Flying Column in the Russian service, and holds the rank of colonel, medical corps——Dr Spiro F Sargentich, Seattle, after several months' service in Serbia, has reached New York on his way home——Dr Walter Gellhorn, Seattle, who was on his way to join the German Red Cross, is reported to be detained in Edinburgh Castle

State Board Officers—At the annual meeting of the Washington State Board of Medical Examiners, Dr Royal A Gove, Tacoma, was elected president, Dr Daniel M Stone, Seattle, vice president, Dr Conrad N B Suttner, Walla Walla, secretary, and Dr Roy A Morse, Wenatchee, treasurer——At the annual meeting of the state board of health held in Olympia, January 20, Dr Elmer E Heg, Chimacum, was elected president, succeeding Dr Fred R Hedges, Everett

WISCONSIN

Personal—Dr William H Bartran has been elected president of the Green Bay branch of the Fox River Valley Efficiency League——Drs Otto H Foerster, James A Bach, Henry B Hitz, Franz Pfister, Alfred H Levings, William F C Witte, Dennis J Hayes, Henry V Ogden, Louis F Jermain, Joseph S Cutler, William T Lochemes and Daniel Hopkinson have been appointed members of the consulting staff to the Milwaukee Hospital for the Insane.

Hospital Notes.—A hospital is being fitted up in Colfax by Dr Lauritz A. Larsen——The annual report of the Luther Hospital corporation, Eau Claire, shows that during the year 1 176 patients were admitted to the hospital The financial report shows a profit of nearly $8,000, most of which was expended for improvements There is at present $5,000 in the building fund and work on an addition to the hospital, to cost $20,000, will be commenced in the spring

CANADA

To Curb Typhoid—Lieut-Col Frederick W Marlow, Toronto, has called a meeting of all the medical officers in the Toronto district to confer on the question of dealing with the outbreak of typhoid fever in the various surrounding districts

Ontario Medical Meeting—For the annual meeting of the Ontario Medical Association to be held in Toronto, May 30 to June 2, the program is well in hand The address in medicine is to be delivered by Dr Elliott P Joslin, Boston, on the treatment of diabetes There is to be a symposium on the role of the mouth, throat, nose and accessory sinuses in disease, and a meeting of military medical officers will also be held

Returned Varsity Medical Students Dined—After a year on active service, thirteen university medical students arrived in Toronto, January 18 They were members of the class of '17 and were dined by other members of the class and faculty that evening They are home with the permission of the War Office to complete their course They will return to the front as soon as they finish and receive lieutenantcies in the R A M C Prof Archibald B Macallum, Dean Charles K Clarke and Prof Alexander McPhedran were among the speakers

Dr Primrose at Saloniki—Lieut-Col Alexander Primrose, chief surgeon to the University of Toronto Base Hospital at Saloniki, writing to Toronto, tells of surgery under peculiar difficulties The operating tent is a large marquee floored and laid down with linoleum, and heated by oil stoves It is 30 feet long While often a driving sleet storm would be raging outside, they were able to operate as comfortably as in a modern hospital The laboratory is well equipped and under direction of Dr John J Mackenzie, and associated with him are Drs Duncan A L Graham and Cyril G Imrie

Summer Session at Toronto University—From May 1 to November 30, fourth-year medical students at Toronto will be given a summer course to qualify for their degree, and there will be no fifth-year course next year at the university This has been approved by the senate on the recommendation of the Faculty of Medicine The summer session will last twenty-six weeks There will be sixty men who will attend the summer session, and when they graduate they will be in a position to accept responsible positions with the various hospital units It is understood that Queen's University, Kingston, will take a similar step

Ontario Military Hospital, England—Fuller particulars of the personnel of the medical staff of the Ontario Government Military Hospital, opened at Orpington, Kent, England, on January 19, are at hand Lieut-Col Arthur E Ross, Toronto, is to be the officer commanding He has been on active service and was recently honored with C M G Lieut-Col Irving H Cameron, Toronto, professor of surgery in the University of Toronto, and who has been doing hospital work at Cliveden, is to be the surgeon-in-chief Lieut-Col Graham Chambers, Toronto, who was recalled from Saloniki, is to be head of the medical service Sir William Osler is to be consulting physician, Dr Donald Armour, consulting surgeon, and Dr George W Badgerow, London, England, a former practitioner of Toronto, consulting specialist

GENERAL

Sanitarians Meet.—The fourth annual meeting of the Southeastern Sanitary Association will be held in Brunswick, Ga., March 23 and 24, under the presidency of C W Oker, Hartsville, S C The vice presidents of the association are Drs Ennion G Williams, Richmond, Va, James A. Hayne, Columbia, S C., and Henry Hanson, Jacksonville, Fla Dr C E Smith, Greenville, S C, is secretary of the association

Impostor Captured—Dr Burnett W Wright, Bowling Green, Ky, writes that C L or M L Mason, has, since October, been impersonating him in different parts of the country, that he has been securing money by false representations, and that in some instances he forged Dr Wright's name to worthless papers Mason is now under arrest and confined in the Warren County jail A notice concerning his activities was published in The Journal, Dec 4, 1915, p 2018, under the title, "Impostor Swindling Physicians" Dr Wright is anxious that victims, wherever located, assist in the prosecution by swearing out warrants and mailing them to the police authorities in Bowling Green, Ky

Containers for Poisons to be Regulated—Representative H A Barnhart of Indiana proposes, in a bill which he has introduced into congress "by request," that the manufacturer or packer of poisonous drugs be required to place on each bottle can, tube, or the like, containing such drugs, a stopper or cap which in shape and inscription shall indicate the nature of the contents The style and composition of the stopper or cap are to be prescribed by the Secretary of Agriculture As the proposed legislation is in the nature of an amendment to the Federal Food and Drugs Act of June 30, 1906, it is applicable only to interstate commerce and to commerce in the District of Columbia and places under exclusively federal jurisdiction

Organization of Clinical Laboratories—A meeting will be held in Chicago, February 26, to form an organization of the leading clinical laboratories of the United States The objects stated are the adoption of standards of efficiency for clinical laboratories, the promotion and encouragement of the development of more exact methods of laboratory diagnosis, and the adoption of standards to which the work of such laboratories should conform The question of standardization of commercial clinical laboratories is of decided importance to physicians, and of vital interest to the public. It is hoped that this organization may result in eliminating any unreliable laboratories which may exist, as well as in increasing the general efficiency of all laboratories

Bequests and Donations—The following bequests and donations have recently been announced

The University of Maryland Hospital, $2,500, by the will of Dr St Clair Spruill, Baltimore

An American Red Cross motor ambulance for European War service, donated by Mrs W L Velie, Moline, Ill

Pennsylvania Hospital, $5,000, for the maintenance of a free bed, Orthopedic Hospital Philadelphia, $5,000, for a surgical ward, by the will of Louisa W Anschutz.

For the establishment of the Henrietta Egleston Hospital, Atlanta, Ga, as a memorial to the mother of the testator, $100,000, for the purchase of a lot and the erection of a hospital building and an annuity of about $12,000 for maintenance, by the will of Thomas Egleston

Cleveland Medical Library Association, $25,000, by the will of Dr Benjamin L Millikin, Cleveland

Clarence Barker Memorial Hospital, Biltmore, N C, $5,000, by the will of Mrs Frances N Wright

National Standards for Milk and Cream—Representative David J Lewis of Maryland has introduced into congress a bill for securing and establishing uniform standards of testing the quality and condition of milk and cream moving in interstate shipments and intended for human food The intimate relation of milk to human health has not seemed to Mr Lewis sufficient to justify medical representation on the commission that is to fix the proposed standards, nor is he willing to take any chances on a woman having a voice in the matter So the commission is to consist of three men, each of whom shall have had at least two years' practical dairy experience, one of whom is to be a bacteriologist, one a chemist, and one a practical dairyman The proposed standards are to govern the quality and condition of all milk and cream moving in interstate commerce, the method of production and handling, the manner of inspection and the taking of tests, and the responsibility of shipper and consignee

Medical Licensure A New Method—If you desire to practice medicine in any territory, district, dependency, or possession of the United States under the constitutional jurisdiction of congress, you may do so without any such trifling annoyance as an examination if you can comply with certain conditions prescribed by a bill recently introduced into congress —that is, if the bill passes The privileges granted by the bill are available to

Any physician or surgeon who assisted, without compensation, in caring for the sick and wounded soldiers of the Army of the United States at the siege of Santiago, Cuba, in 1898, in the War with Spain, and who, after the surrender of Santiago, was in charge of a yellow fever hospital, and while so in charge of said hospital in 1898 had an attack of yellow fever, and who was afterwards commissioned major and brigade surgeon, and in 1899 commanded a yellow fever hospital at another station in Cuba, and who, while on military duty in Cuba had a second attack of yellow fever, and who, by reason of said attack or attacks of yellow fever, or while in line of duty, was physically disabled, and who was honorably discharged from the service of the United States

None others need apply

Safety First Exposition—From February 21 to 26, in the New National Museum at Washington was held a Safety First Exposition to demonstrate to the public what the government is doing to promote saving of life and property Twenty-six bureaus of the government participated, the apparatus and methods used by each being exhibited and demonstrated by experts The exposition was open from 9 to 4 30 daily From the Department of Commerce five bureaus participated —standards, lighthouses, navigation, steamboat inspection service, and coast and geodetic survey The Bureau of Medicine and Surgery of the Navy Department illustrated first aid in war and life-saving at sea The Bureau of Mines demonstrated its mine rescue apparatus The Bureau of Education, the Bureau of Labor Statistics, the Forest Service and the Children's Bureau were among the other exhibitors

Fraudulent Canvassers and Collectors—A notice which appeared in The Journal, Dec 12, 1915, page 521, is reprinted below

Fraudulent Canvassers and Collectors—We have repeatedly published warnings against fraudulent canvassers and collectors—sometimes in the Editorial department, sometimes in Queries and Minor Notes, and sometimes in News In spite of these repeated warnings, some of our readers are still allowing themselves to be swindled The scheme frequently followed is one that appeals to those who are ever ready to help a fellow mortal A young man shows a printed blank indicating that he is a "contestant" for a prize in the form of a scholarship in an educational institution, to be awarded to the one who sends in the most business in a certain time. Again we suggest that those who would avoid being swindled should not pay money to traveling men whom they do not personally know Checks should not be made payable to any person, but to the concern the person claims to represent, and even then one should be very sure that there actually is such a concern. Money should not be paid to any one claiming to represent the American Medical Association unless he carries credentials bearing the signature of the Editor and General Manager and the seal of the Association.

Under date of February 16, Dr William Schulze, Monroe, La, wrote advising that The Journal's warning had put him on his guard As he had been approached in a manner similar to that described in the foregoing warning, he wished to advise the Association that under the name of R E Douglass, "a man about 23 years old, well dressed" and with "quite a flow of good language" solicited subscriptions to The Journal of the American Medical Association and other medical journals, and that Douglass stated that he was "trying to earn a scholarship in the Georgetown University, Washington, D C, that every dollar would get him one vote." Dr Schulze asked for credentials from the American Medical Association The solicitor did not have them but did have a letter from the Publishers Association in the City of New York authorizing him to take subscriptions for any publication listed in a catalog he had with him, and that The Journal was listed in this catalog Dr Schulze did not fall a prey to the scheme and warned the physicians of Monroe to be on the lookout

National Committee for Mental Hygiene Holds Annual Meeting—The eighth annual meeting of the National Committee for Mental Hygiene, held February 2 in New York, was attended by a large group of distinguished alienists, social workers and philanthropists Mr Otto T Bannard, the treasurer, announced that the Rockefeller Foundation had donated to the National Committee $22,800 for carrying on surveys of the care of the insane in sixteen states during the present year, supplementing gifts of Mrs William K. Vanderbilt, Mrs A A Anderson and Mr Henry Phipps, which makes it possible for the committee to greatly extend its work

The report of Mr Clifford W Beers, the secretary, showed the remarkable growth of the movement for conserving mental health and for improving the care of the insane and feebleminded Societies for mental hygiene are now at work in eleven states During the present year societies are to be organized in seven additional states About twenty-five times as much is being expended on this sort of mental hygiene work as was spent in 1908 when the first society was founded

Dr Walter E Fernald, superintendent of the State School for the Feebleminded of Waverly, Mass, presented a plan which had been adopted by the subcommittee on mental deficiency, of which he is chairman, for popular education, extensive surveys and researches in this subject. Dr William L. Russell, White Plains, N Y, medical superintendent of Bloomingdale Hospital, described how the work of the National Committee is conducted under the supervision of an executive committee, all experts in different fields of mental hygiene

Dr Thomas W Salmon, New York, the medical director of the committee, gave an account of the surveys of the care of the insane which had been carried on during the year in South Carolina and in Texas and announced that similar studies, each conducted by expert alienists, are under way or about to be undertaken in California, Tennessee, Missouri, Illinois, North Dakota, Indiana and in the District of Columbia

The following officers for the ensuing year were elected Dr Lewellys F Barker, Baltimore, president, vice presidents, Dr Charles W Eliot and Dr William H Welch, Baltimore, treasurer, Otto T Bannard, medical director, Dr Thomas W Salmon, New York, secretary, Clifford W Beers, executive committee, Drs August Hoch, chairman, New York, George Blumer, New Haven, Conn, Prof Stephen P Duggan, Drs William Mabon, New York, William L Russell, White Plains, N Y, and Lewellys F Barker, Baltimore, finance committee, Prof Russell H Chittenden, chairman, Otto T Bannard, Dr Henry B Favill, Chicago, and William J Hoggson, committee on mental deficiency, Dr Walter B Fernald, chairman, Waverly, Mass, Dr L Pierce Clark, New York, Prof E R Johnstone, Dr Charles S Little, Thiells, N Y, and Dr Albert C Rogers, Los Angeles

FOREIGN

New German Medical Journal at Prague—As successor to the *Prager med Wochenschrift,* which suspended publication at the onset of the war, the *Aerztliche Nachrichten* has been founded as the organ of the German-Bohemian physicians Dr G Pick of Aussig is the editor

U S Collier Takes Medicine to Palestine—Announcement was made, February 2, by the Central Jewish Relief Committee, New York, that arrangements had been made for the shipment of a cargo of medicine to Palestine by a United States collier, which was to sail February 15

Convalescent Home for Physicians at Berka.—A villa with extensive grounds near a watering place has been purchased by the Leipzig League for this purpose This association was organized years ago, it will be remembered, to promote the economic welfare of the medical men of Germany, and it has aided materially in improving conditions in contract practice, etc.

League for Sexual Ethics—A German association has been founded among medical men and medical students for propaganda of the principle that sexual abstinence until marriage is the only true means for combating venereal disease The members pay a semiannual fee of about 36 cents Further details in regard to this new "Medizinerbund für Sexualethik" may be obtained from Dr Röthig, Südstra 9, Leipzig, Germany

Issues of Obstetrical Journal Delayed—The publishers of the *Journal of Obstetrics,* London, announce that there has been no issue of the journal since May on account of the scarcity of contributors, due to the great number of men who have placed their services at the disposal of the army The publishers expect, however, to have four issues ready about the end of this month and after the 1915 issues are published the journal will appear quarterly during the continuance of the war

Improvement in Sanitation.—Increased attention is being given to the improvement of sanitary conditions, the opening up of congested areas and better town planning, in Madras Presidency, South India, according to *Commerce Reports* At an industrial exhibition in Madras during the holidays one of the interesting features was a model Indian village with houses open to the inspection of the large number of people who visited the fair Clay models of towns built on good and bad plans and lectures on health topics served also to educate the people along town planning and sanitary lines

Deaths in the Profession Abroad—Santa Cruz, chief of the Ophthalmologic Institute at Madrid, the first public infirmary in Spain for treatment of affections of the eyes——K. Rauchfuss of Petrograd, the leading Russian pediatrist, at an advanced age He was director of two of the principal hospitals for children and was an international authority on hospital hygiene, children's surgery and orthopedics, and internal medicine He was one of the first to get up circulars to distribute to mothers to aid them in raising their children A compilation of a number of his circulars was published as long ago as in 1882 (in Russian)——A Ibarguren, director of a large public hospital at Buenos Aires, contributor to medical periodicals and popular postgraduate lecturer, aged 43

Workmen's Compensation Law—The Colombian Congress has recently enacted a law, which has been published in the *Diario Oficial,* making obligatory compensation to workmen for accidental injuries incurred in the course of their work. The beneficiaries of the law comprise workmen engaged in public lighting plants waterworks, railways and street cars, breweries and distilleries, match factories, building and masonry work where more than fifteen men are employed, mines and quarries, large boats, government works and manufacturing plants using mechanical power Employers may have their employees insured to provide against accident obligations The government has appropriated $500 for insuring employees during the first year of the operation of the law Further details are given in *Commerce Reports*

Yellow Fever—The Report of the Department of Health of the Panama Canal for December, 1915, says that with the advent of the rainy season, yellow fever was again reported at Guayaquil, though the number of cases up to the time of the report had been small In Buenaventura, Colombia it was said that yellow fever conditions continued unsatisfactory, and that no apparent effort had been made to eradicate the disease Travelers, it is said, reported that the infection extended throughout the country in the vicinity of Buenaventura Reports in Buenaventura that the infection came from Panama are denied by the health authorities of the Canal Zone Two patients with yellow fever arrived at Balboa quarantine from Buenaventura, December 10 They were immediately isolated and the vessel on which they came was disinfected and held, with the personnel, in quarantine for six days One patient died in the Ancon Hospital, December 14, and the other was discharged well

One Hundred and Twenty-Fifth Anniversary of Netherlands Medical Society—There are not many associations for the advancement of science that can look back on 125 years of continuous activity The Amsterdam Genootschap ter Bevordering van Natuur-, Genees- en Heelkunde was founded in 1790, and at its recent one hundred and twenty-fifth annual meeting Dr C C Delprat reviewed its history and achievements As its name implies, Association for Nature Study, Medical Art and Medical Science, medicine always took the leading place in its transactions, and it has a noteworthy history in this line Delprat's address is published in the opening number of the *Nederlandsch Tijdschrift voor Geneeskunde* for 1916, which begins the sixtieth year of our exchange It is accompanied by a dozen engravings showing the amphitheater for teaching of anatomy, 1690, lecture room, 1760, hospital, 1763, and a number of early officers of the society The gala meeting was presided over by Prof G van Rijnberk, who is also editor of the *Tijdschrift* The society awards the Swammerdam medal every tenth year The four recipients to date have been the Germans, Siebold, Haeckel and Gegenbaur, and the Netherlands scientist, Hugo de Vries The Tilanus medal has been awarded every five years since the death of this eminent surgeon It is given for the best work on some surgical or medical subject, and has been awarded to Zwaardemaker, C de Mooy, L Bolk and J Boeke, all of the Netherlands The society also distributes some stipends to medical students for study abroad, and has officially contributed to a number of endowment funds in honor of various foreign scientists On the occasion of the International Medical Congress, meeting at Amsterdam in 1879, seventeen of the foreign scientists attending the congress were elected honorary members of the association When first organized, the Genootschap was exclusively medical, and a photograph of the first formal certificate of membership is reproduced. It is dated 1790

WAR NOTES

Drug Store Supplies in Germany—A Berlin exchange states that pill and powder boxes and glass containers have had the price raised by 5 pfennige each The last official price list of pharmacists' supplies includes, for the first time, antimeningitis serum, but no price is specified for benzin, English chloroform, English oil of peppermint, English atrop sulf., hydrochloric solut, petroleum, and hen's eggs These have been dropped from the official *Arzneitaxe*

Polish and Flemish Universities Planned—The German authorities have transformed the Russian university at Warsaw into a Polish institution, with Poles as incumbents of the various chairs It is now planned to transform the University at Ghent, in the same way, into a Flemish institution, instead of the French language being used This university dates from 1816, and in 1913 had 1,253 matriculants, including 272 foreigners Among the better known professors then were von Ermengem, J F Heymans and C Verstraeten

Welfare Work for Maimed Soldiers—All the belligerents are organizing on an extensive scale and coordinating the efforts to 'uncripple the cripples," supply artificial limbs and train in the use of them, and combat in every way the tendency to deformity and disability Foreign journals teem with illustrated articles showing constantly improving protheses and functional adaptation of the wounded The German Orthopedic Society called a special meeting at Berlin early in February, the main subjects discussed, outside of protheses, being treatment and after-management of wounds of nerves and after-treatment of deformed healing of fractures, contractures and ankylosis and of the secondary functional disturbances after injury of peripheral nerves An exhibition of artificial limbs, from those with merely historic interest to the latest improved devices, supplemented the gathering, and it was preceded by a special meeting of the association formed for surveillance and coordination of all institutions and efforts to aid the war cripples Biesalski reviewed what it has accomplished in the year of its existence, and the share of medical men in the work. Others discussed the subject from the standpoint of agriculture, clerking, teaching, etc The French military authorities provided from the first orthopedic central stations at numerous points to which the wounded were referred The necessity for combining neurology and physiotherapy with orthopedic surgery was recognized early, so that these central stations were usually blended together Reports of the year's work done in such institutions in 1915 are now being published in France and Germany—wonderful records of human ingenuity and perseverance

LONDON LETTER

London, Feb 1, 1916

The War

THE ENROLMENT OF PHYSICIANS FOR THE ARMY

The enrolment of physicians in civil practice for the army continues *pari passu* with that of the civil population It is being organized by the Central Medical War Committee This body was originated by the British Medical Association, but includes members who do not belong to the association, and is working with the consent and authority of the director general of the Army Medical Service The committee is recognized by him as the medium for providing physicians needed by the War Office for the army, and at the same time protecting the needs of the civil population The committee has sent a letter to every physician of military age, confidently appealing to him to enroll for service It hopes to obtain every one of that age (that is, up to 45), so that further calls by the director general of the Army Medical Service may be promptly met, with due regard to the necessity of the services to the needs of the civilian population, and to the circumstances of individual medical practitioners It is pointed out that unless all are enrolled, it will be very difficult for the Central Medical War Committee to make its calls throughout England and Wales in a manner which will minimize the inconvenience suffered both by the community and by individual physicians The enrolment of all physicians of military age does not mean that all enrolled will be called on to take a commission The number called on will depend entirely on the demands of the services The calls will be made in consultation with local committees, which will insure due regard for local needs The committee trusts also that those who are not able, or are not required, to undertake military service will, so far as opportunity offers and their ability permits, contribute to the military strength of the country by placing their services at the disposal of the local medical war committees for the purpose of arrangements that may be necessary for the conservation of the practices of men of military age to enable them more easily to enroll

THE SUPPLY OF PHYSICIANS

While the shortage of physicians must continue as long as men are drawn in large numbers from civil practice by the army, the threatened shortage of the future, due to the recruiting of medical students (previously described in The Journal) does not appear to be such a danger as was anticipated Some figures recently issued by the General Medical Council are a surprise The number of physicians registered in 1915 is greatly in excess of the average of the previous five years The numbers are England, 863, Scotland, 412, and Ireland 251 The averages for the previous five years are, respectively, 591, 384 and 197 The total for 1915 is 1,526, against an average of 1,172 for the previous five years The number of medical students registered in 1915 also shows a great increase The figures are England, 754, Scotland, 694, and Ireland, 470 The averages for the previous five years were, respectively, 620, 517 and 304 Thus the total number of registered medical students in 1915 was 1,918, against an average of 1,441 in the previous five years The increased number of physicians registered in England in 1915 is mainly due to the registration of physicians with colonial and foreign qualifications, which has been permitted since the war These amount to 269 In Ireland and Scotland the excess seems to be due to the earlier qualification of fifth year students anxious to join the army This is borne out by the fact that last year there was a shortage in the schools of from 200 to 300 fifth year students Again, the policy adopted by the War Office, on the advice of the medical authorities, of requiring medical students who had enlisted in various capacities to return to their schools in order to qualify seems to be the chief cause why the expected shortage has been replaced by an actual increase It is thought that the return of the fourth year students from the ranks will tell in the present year in a similar way The rise in the number of medical students is probably largely due to the increased incomes obtainable by the rank and file of the profession from practice among the working classes since the passing of the insurance act—an increase which has reacted on the salaries offered to young physicians by hospitals, public bodies and shipping companies This condition has been described in previous letters Another cause of the increase is the greater number of women students who have entered the profession

BERLIN LETTER

Berlin, Jan 19, 1916

Personal

DEATH OF KÜLPE

Oswald Külpe, professor of philosophy and psychology, died in Munich, Dec 31, 1915, at the age of 53 Although not a member of the medical faculty, much of Külpe's research work was done in medical subjects, and his results were of value not only for psychology but also for psychiatry He was one of the most thorough investigators in experimental psychology and psychophysics He was a master of technic, at the same time he was a keen thinker and well versed in theoretic and metaphysical problems In 1887 he graduated in Leipzig as a pupil of Wundt's His thesis was entitled "The Theory of Psychic Sensations," and in the following year he won for himself a place in the philosophical faculty by writing on "The Study of the Will in Newer Psychology" In 1894 he was made extraordinary professor, and in the fall of the same year he was called to Wurzburg as ordinary professor During the summer of 1909 he went to Bonn, and in October, 1913, he was called to Munich Here he assisted in the direction of the philosophical seminary and the newly-erected institute for psychology In 1907, the medical faculty of Giessen conferred on him the honorary doctor's degree in recognition of his researches in experimental psychology It will be remembered that Sommer was then a member of the Giessen faculty, and, like Kulpe, he was very much interested in experimental psychology In his original researches Kulpe was influenced very much by Wundt, but later on came out more strongly all the time for the dual theory He regarded the problem of reality as the essential one in philosophy He wrote much Among his better-known writings may be mentioned his "Essentials of Psychology from the Experimental Standpoint," and his "Introductions to Philosophy" as well as his more popular writing "The Philosophy of the Present" and his monograph on "Immanuel Kant"

DEATH OF KLAATSCH

January 7, Prof H Klaatsch, one of the younger anthropologists, died in Breslau, at the age of 52 During his last semester as a student, he was made assistant to Waldeyer, and in 1888 he was appointed assistant at the Heidelberg anatomical institute In 1895 he was appointed extraordinary professor Since 1907 he has occupied a similar position in Breslau Prior to that time he had made a very extended study of the aborigines of Australia He learned that these people were closely related to the Asiatic-European races Of his researches in anatomy may be mentioned those on the morphology of the tactile bodies in the feet of the marsupials which led him to a further study of the phylogenetic significance of the lines in the hand of the human He was also interested in the study of fish anatomy, the morphology of the fish scales, as well as the anatomy and embryology of the spinal column Prominent among his anthropologic researches are those made in collaboration with Dr Hauser, who published the finding of the *Homo auvignaciensis* in the Dordogne Klaatsch made the anthropologic study of the skeleton, and definitely established the direct descent of man of the present day from man of the stone age. Klaatsch advanced Darwin's theory of the descent of man by his paleontologic findings He also studied the Neanderthal skull, and on the basis of his findings concluded that it resembled in construction the gorilla, and therefore was probably descended from anthropoid ancestors who came from Europe to the East, whereas the Auvignac race, which resemble the orang, probably are descended from a further east stem The man apes of today bear a very strong resemblance in development to the original human stem

DEATH OF FRIEDRICH

Professor Friedrich, the well-known surgeon, died from sepsis, January 16, after many weeks of illness He was only 51 years of age, but had attained considerable prominence. He passed his examinations in 1888, and immediately was appointed assistant in the bacteriologic division of the imperial health department. In 1891 he removed to the surgical clinic in Leipzig, and in 1896 he was appointed extraordinary professor and director of the surgical policlinic institute From there he went to Greifswald, and in 1907 he went to Marburg In 1911 he was called to Königsberg Some of his valuable contributions to science were his study of the cholera and tubercle bacillus, the surgical treatment of the epileptic and of pulmonary tuberculosis and emphysema His work on the digestive tract is also well known

The War

SANITATION IN EAST PRUSSIA DURING THE WAR

The report made by the chief of the division of medicine of the Prussian ministry to the director of the interior, Kirchner, several weeks ago, dealing with the sanitary development of East Prussia, contains points of interest to American physicians Kirchner visited those parts of East Prussia in which war had been waged, and where the occupation by the Russians played havoc with the usual sanitary regulations in order to determine just how much damage had been done and how much could be repaired He traveled through the country of the Masurian lakes because of the reports that many thousands of Russians and their horses had been driven into these seas during the battle of Tannenberg and died either as a result of drowning or of shooting Naturally, if this were true, the health of the people living in the surrounding country would be endangered because of the dead bodies of men and animals which would come to the surface and undergo putrefaction, although such reports could well have been regarded as untrue because these Masurian lakes are many miles east of the Tannenberg battlefield The official investigations made by the authorities within the sphere of the Tannenberg battlefield show that neither men nor horses were driven into these waters and surely not thousands of them This is another illustration of the fantastic statements that have been made and which cast discredit on all concerned

Another subject to be mentioned in this connection is the reported mistreatment of women in the war zone Official investigation has shown that in East Prussia there were only thirty-eight cases of pregnancy for which Russians could be held responsible. No definite proof of so-called assault could be obtained

THE MEDICAL TREATMENT OF THE FAMILIES OF THOSE PARTICIPATING IN THE WAR

The city of Berlin has published the following resolutions

1 The city of Berlin has appropriated 500,000 marks ($125,000) for the medical treatment of the families of those participating in the war for the year beginning Jan 15, 1916 The council of the *Aerztekammer* (chamber of physicians) receives a monthly remittance and distributes the money to those physicians who have been active in the treatment of such persons named

2 The city of Berlin has been divided into twenty-three medical districts, and will take care of the families of those in the war who are receiving support from the government, but are not members of any sickness insurance. The physicians and specialists living in these districts will be assigned to the work, provided that they will subscribe to certain regulations If they are assigned to visit a family which is already receiving medical attention, then the government physician may allow the family physician to continue his ministrations These physicians must agree to see these patients during their usual office hours, or in the home of the patient whenever necessary Special treatment will be given only on recommendation of the general practitioner The *Aerztekammer* will ask all physicians practicing in Berlin to take part in this work, and will furnish the magistrate with a list of those who agree to do so These regulations will be in force only from Jan. 15, 1916, to April 15, 1916, and any desire on the part of the physicians to discontinue such service must be made known at least four weeks before the expiration of this three months' period If this is not done, then the contract will continue for another period of three months until such time as the public authorities withdraw their support from the whole scheme It is stated specifically that the appropriation of 500 000 marks need not necessarily be expended, but only such portion of it as is needed for the continuance of this work. The physicians' bills are sent to the *Aerztekammer* whose officials will audit and approve, if correct, then remitting directly to the practitioner

PARIS LETTER

Paris, Jan 27, 1916

Personal

January 11, the Academie de médecine elected as foreign correspondents in the section of medicine Professor Ladame of Geneva and Sir Dyce Duckworth of London

Death of Prof Edmond Heckel

Edmond Heckel, professor in the Faculte des sciences de Marseille and professor of materia medica in the Ecole de medecine de Marseille, has just died at Marseilles, aged 73 Professor Heckel had published, in particular an "Histoire médicale et pharmaceutique" of the principal medicinal substances introduced into therapeutics in recent years, as well as numerous memoirs on caffeine, kola, etc He had been a national correspondent of the Académie de médecine for the section on medical physics and chemistry since 1880

An Offense Against Public Health Committed by a Mayor

M Mirman, the prefect of the department of Meurthe-et-Moselle, has just suspended the mayor of Rosieres-aux-Salines from his functions for fifteen days The mayor posted a notice informing the populace that the person responsible for the removal of the troops from the commune was the cantonal physician The prefect of Meurthe-et-Moselle believes that the mayor committed a grave offense when, instead of explaining to the inhabitants of the commune the necessity of a measure for the protection of the public health, he endeavored to excite their resentment against a physician who had simply performed his duty, and who would have been subject to penalties if he had sought to evade it.

The War

TREATMENT OF SETON WOUNDS

Dr Tuffier, at a recent meeting of the Sociéte de chirurgie de Paris, advised the systematic introduction into seton wounds of a drain for irrigation and disinfection by Dakin's fluid Dr Broca showed, by personal statistics, that more than three fourths of these seton wounds healed without other treatment than applications of aseptic dressings at the orifices of entry Continual irrigation of Dakin's fluid therefore has no advantage in such cases, on the contrary, it has disadvantages, for in seton wounds which contain debris of clothing with or without bone fragments, Tuffier himself admits that irrigation with Dakin's fluid is inefficacious In these cases the only course to pursue is to open up freely on the appearance of the first signs of inflammation

CRANIAL PROTHESIS WITH PERFORATED IVORY PLAQUES

To supply the loss of skull substance due to trephining, plaques of gold are often used At a recent session of the Societe de chirurgie de Paris, Dr Mauclaire presented two patients on whom, for the same purpose, he had used plaques of perforated ivory which, at the end of six or eight weeks respectively, are still well tolerated The advantage of these ivory plaques is that they may be made in advance The edges being very thin, the plaques can be cut down a little if they are too large It is unnecessary to fasten them with pegs, or to insert the anterior or posterior edges under the skull, for cellular tissue rapidly penetrates the perforations These plaques are very cheap

CERVICAL RHEUMATISM AND SCIATIC NEURALGIA ASSOCIATED IN SOLDIERS

Dr P Nobecourt has observed some soldiers affected with cervical rheumatism who, in most cases, also suffer from sciatic neuralgia In these latter cases the association of the pains in the nape of the neck with those of the limbs forms a well-defined syndrome The onset of the attack, which may be preceded by prodromal symptoms, is, in general sudden and rapid and in most cases appears to be produced by a march, by severe labor, by exposure to rain or by a night passed in damp quarters Of all the symptoms observed (elevation of temperature and acceleration of pulse, slight hypertrophy of the spleen, habitual constipation, headache, especially frontal, pain in the nape of the neck, etc.), pain in the nape of the neck is the most characteristic. It is not very intense except when it is produced by movements of the neck, which thus becomes almost completely immobilized The head may still be bent forward on the chest, however without pain Palpation of the neck localizes the painful points, which are situated in general in the posterolateral regions of the neck near the transverse vertebral processes In the legs, examination shows, in general at least, light signs of sciatica Pressure on the eyeball is sometimes painful Lumbar puncture withdraws under more or less pressure a clear cerebrospinal fluid in which albumin is ordinarily increased, nearly always to a marked degree In these cases the vertebral rheumatism and sciatic neuralgia yield rapidly under treatment with aspirin or sodium salicylate, and the patient recovers in a few days unless cardiac complications occur The meningeal reaction indicated by the changes in the cerebrospinal fluid sometimes leads to a suspicion of cerebrospinal meningitis Methodical examination of the patients, however, brings out the true diagnosis In these cases the symptoms of cervical arthropathy and neuralgia dominate, while those which characterize meningitis (stiffness of the nape of the neck, Kernig's sign) are missing or are diminished Lumbar puncture removes all doubts It should be performed without hesitation, especially since it frequently makes the patient more comfortable

MEASURES AGAINST FRAUDS IN FOOD ON THE ARMY FRONT

M Justin Godart, the assistant secretary for the military medical service has recently decided, in order to prevent frauds on the part of dealers, to authorize the military pharmacists to exercise careful control over all the foodstuffs for the use of the soldiers and to make any examination or analysis which may appear worth while

HOSPITAL ACCOMMODATIONS IN SWITZERLAND FOR PRISONERS OF WAR

I recently mentioned (The Journal, Feb 12 1916, p 522) that the negotiations with regard to the placing of the sick prisoners of war in the hospitals of Switzerland were about completed Preparations are already being made at Leysin to receive the first French prisoners from Germany These are patients affected with pulmonary tuberculosis and tuberculosis of the bones (Pott's disease, coxalgia, etc) The pulmonary patients will be cared for in the higher part of the resort, which is reserved for such patients The others will be cared for in Leysin village, in special clinics for heliotherapy, under the direction of Dr Rollier The private soldiers will be lodged in groups, each under the command of an officer or noncommissioned officer The pay given by the French government (5 francs [$1] for a private soldier, and 8 francs [$1 60] for an officer) permit the hotel keepers to give their guests healthful and abundant food

ADVICE FOR THE PRESERVATION OF THE SOLDIER'S HEALTH

The war department through the assistant secretary for the military medical service, has been distributing to our soldiers at the front a little brochure entitled "Conseils au soldat pour sa sante" which contains useful hints as to personal cleanliness, measures for protection against insects, cold, frost bite and complications as well as against asphyxiating gas

AID FOR DISCHARGED TUBERCULOUS SOLDIERS

The municipal council of Paris has just requested the prefect of the department of the Seine to prepare, as soon as possible, a plan for building barracks for the isolation and treatment of tuberculous patients on the available land of the hospitals of Paris The barracks are to accommodate 2,500 beds

SLEDGES FOR THE TRANSPORTATION OF THE WOUNDED

A subscription from the members of the Swiss colony in Paris has resulted in the gift to the medical service of the French army of 100 sledges for the transportation of our wounded soldiers in the Vosges Each one bears a copper plaque ornamented with the symbolic figure of Helvetia, surrounded with edelweiss

MALINGERING

I mentioned in a previous letter cases of phlegmons artificially produced by injection of coal oil (The Journal, Dec 4, 1915, p 2021) Dr Laval has just made an interesting report on this subject to the Societe de chirurgie de Paris These abscesses are usually seen in a special class of soldiers, especially those who have undergone punishment or have come in contact with such men These malingerers take care to devise a plausible explanation for the lesion Some make an injection on the site of an old lesion or wound, others offer blows, falls, stumbles or wounds by barbed wire as the cause of the inflammation Still others, afraid of being entrapped, say nothing until pressed for an explanation, when they break down and confess According to the confessions, the instrument used is the ordinary morphin syringe which may be obtained at any drug store The contents are injected into the subcutaneous cellular tissue at one injection or in several places in the same vicinity Laval has seen coal oil abscesses on the legs on the forearm, on the hand (never on the upper arm), and most frequently on the inner side of the knee joint The exterior appearance of the abscess is typical It is that of a tumefied phlegmon, often extending over a surface the size of the palm of the hand with here and there phlyctenae with purulent contents The tumefaction is often sharply circumscribed like the swelling of erysipelas Sometimes one may observe little grayish points, which are the traces of the puncture where the injection was made The fluctuation appears on the fourth or fifth day It is very easily observed and is characteristic of the infection Incision lets out more or less abundant pus mixed with clots and with black fluid blood Trabeculae divide the interior of the abscess The odor of coal oil is noticeable when an abscess is opened but the liquid itself exposed to the air rapidly loses the odor Sometimes the pus has no odor, but a compress introduced into the lesion and rubbed against the sphacelated walls absorbs the odor to a marked degree. There are special peculiarities in the course of these cases The abscesses are very slowly cleansed, the process lasting for several weeks, and new cutaneous and conjunctival necroses often occur if the injection was deep Fragments of muscle and tendon are eliminated Secondary local infections and sometimes septicemia are produced by these eliminating suppurations Laval had to amputate in one case The appearance of the lesions, the mingling of phlegmonous and gangrenous processes and the odor of the pus are the characteristic features of abscesses caused by injections of coal oil Laval mentions a special chemical reaction devised by Theuvenot, pharmacist of the hospital of Neufchateau Three test tubes are half filled with a very weak bromin solution of a strength showing a yellow like that of a yellow chartreuse wine In the first is placed 1 c c. of suspected pus If it contains coal oil, decoloration takes place almost immediately, the fluid assuming a clear gray color and the pus accumulating at the bottom of the tube in gray flakes The second tube is a blank and the third receives 1 c.c of pus from an ordinary abscess In this there is no discoloration

Dr Savariaud emphasizes the fact that in phlegmons caused by injection of coal oil the multiplicity of foci is not due to the number of punctures, and that diffusion may be due to the injection of a very heavy dose This feature is characteristic of this kind of phlegmon, for there is no other way in which many phlegmonous and gangrenous lesions can be produced without any visible point of introduction of the injurious substance.

I also mentioned in a previous letter the simulation of albuminuria (The Journal, Nov 27, 1915, p 1930) Dr Minet has also called the attention of the Societe medicale des hopitaux de Paris to this subject Fraud (that is, injection of albumin into the bladder by way of the urethra) may be suspected when, if the subject urinates twice with a certain interval between the two micturitions, there is a considerable lowering of the albumin percentage or albumin is entirely absent in the second glass This procedure, however, is not absolute proof To avoid all chance of error Minet advises that the second glass of urine be obtained by a catheter left in place for some time under surveillance

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Marriages

Hiram Leonard Johnson, M D, Franconia, N H, to Sarah Elizabeth Coppinger, M D, Needham Heights, Mass, in Boston, February 8

Laurance Phillips Runyon, M D, to Miss Katherine McClelland Neilson, both of New Brunswick, N J, February 9

Henry Rihl Alburger, M D, to Miss May M Littlefield, both of Indianapolis, February 3

James A Campbell, M D, Elgin, Ill., to Miss Ruby Dale, at Los Angeles, February 3

Leo Matthew Czaja, M D., to Miss Julie Belohavek, both of Chicago, February 15

Deaths

Henry Baird Favill, M D Chicago, Rush Medical College, 1883, aged 55, one of the best known physicians of Chicago, died in Springfield, Mass, February 20, from pneumonia

Dr Favill was born in Madison, Wis, Aug 14, 1860 He graduated at the University of Wisconsin in 1880, and then entered Rush Medical College, from which he graduated three years later He practiced in Madison until 1893, when he was induced to come to Chicago

Soon after his arrival in Chicago he was made professor of medicine in the Chicago Polyclinic, in 1898, professor of therapeutics and later professor of clinical medicine in Rush Medical College.

In 1910 at the St. Louis meeting of the American Medical Association he became a member and chairman of the Council on Health and Public Instruction and filled that position to the time of his death He was president of the Chicago Medical Society in 1907-1908 Besides his affiliation with the American Medical Association he was a member of the Chicago Pathological Society, Chicago Institute of Medicine, Physicians' Club of Chicago and many other scientific and social bodies Until 1913 he was president of the Chicago Tuberculosis Institute. He had also been an officer of the National Society for Mental Hygiene, Chicago Association of Commerce, United Charities of Chicago, National Dairy Council and Holstein-Friesian Association He was president of the latter association at the time of his death He was attending physician to St. Luke's, Passavant Memorial and Augustana hospitals For three years he was president of the Municipal Voters' League of Chicago

Dr Favill did not limit his interests to medicine, but early took up the consideration of civic problems He was an able champion of good government, clean politics, municipal improvement and sanitary progress He was made a director of the City Club of Chicago the year after its organization and became its president in 1911, and at the time of his death he was a trustee of the Chicago Bureau of Public Efficiency

Dr Favill was proud of his Indian blood which he traced back to Kewinoquot, a chief of the Ottawa tribe He was a man of superb physique and exuberant vitality and an unlimited capacity for work. Three weeks before his death Dr Favill presided at a meeting of the Physicians' Club of Chicago at which the topic of discussion was 'Longevity" Pneumonia was there said to be one of the principal opponents of the efforts of the medical profession to prolong life Soon after Dr Favill was called to attend Mr John J Herrick, a prominent lawyer of Chicago and son of Dr William B Herrick, one of the pioneer practitioners of the city Mr Herrick was ill with pneumonia and died Dr Favill attended his funeral The law partner of Mr Herrick, Mr Charles L. Allen, son of Dr James Adams Allen, formerly president of Rush Medical College, attended the funeral of Mr Herrick, caught cold, pneumonia supervened and in spite of all efforts made by Dr Favill, succumbed to the disease Dr Favill attended Mr Allen's funeral

Dr Favill went to Springfield, Mass., early last week to deliver an address before the New England Dairymen's Convention on behalf of the National Dairy Council of which he was president, but was prevented by illness

Dr Favill was a man of strong personality, a friend of sterling quality, a modern St Michael in fighting the dragons of inefficiency, corruption and wrong The tribute of one friend expresses well the characteristics of Dr Favill "He was interested efficiently in more activities outside of his profession than any other physician in the country"

HENRY BAIRD FAVILL, M D., 1860-1916

Henry Leopold Elsner, M D, Syracuse, N Y , College of Physicians and Surgeons in the City of New York, 1877, aged 60 He was a Fellow of the American Medical Association, and of the New York Academy of Medicine, a member of the American Gastroenterological Association and American Climatological Association and formerly president of the Medical Society of the State of New York, Onondaga Medical Society, Central New York Medical Association and Syracuse Academy of Medicine He was a member of the faculty of the Department of Medicine of Syracuse University since 1881 and later, to the time of his death, professor of medicine of that institution, he served also as consulting physician to St Joseph's Hospital, the State Hospital for Crippled and Deformed Children and the Women's and Children's Hospital, Syracuse Dr Leopold Elsner, father of Dr Henry L Elsner, and Dr Simon Elsner of Rochester, N Y., a brother, died suddenly a few years ago Just previous to Dr Elsner's death he had completed a book on prognosis which had occupied his time largely during the last few years He was noted as a teacher and was frequently called in consultation throughout the country At the time of his death Dr Elsner was in Washington, D C., where he had taken up temporary residence in order to obtain rest from his numerous duties He contracted a severe cold, from which he was unable to rally, and died suddenly, February 17

George Dwight Kahlo, M D, White Sulphur Springs, W Va , Bellevue Hospital Medical College, 1891, aged 51, a Fellow of the American Medical Association, president of the Indiana State Medical Association in 1909, secretary to the United States consul at Sydney, Australia, in 1881, once police surgeon of Indianapolis, for several years professor of the practice of medicine and dean of the Central College of Physicians and Surgeons, Indianapolis, and later professor of clinical medicine in the Indiana University School of Medicine, from 1908 to 1912 medical director of the French Lick Springs Sanatorium and since that time medical director of White Sulphur Springs, W Va , died suddenly at Old Point Comfort, Va., February 12, from cerebral hemorrhage.

William Edward Moseley, M D, Baltimore, Harvard Medical School 1874, aged 67, a Fellow of the American Medical Association, American Gynecological Society and American College of Surgeons, president of the Gynecological and Obstetrical Society of Baltimore and of the Alumni Association of the Women's Hospital in the State of New York, professor of diseases of women and children in the Baltimore Medical College from 1897 to 1910, and gynecologist to the Union Protestant Infirmary, Baltimore, died at his home, February 10, from carcinoma.

Edgar David Coonley, M D, Port Richmond Staten Island, N Y , College of Physicians and Surgeons in the City of New York, 1877 aged 71, a member of the Medical Society of the State of New York, formerly president of the Richmond County (N Y) Medical Society a veteran of the Civil War, consulting surgeon to the S R. Smith Infirmary, Port Richmond, and at one time a member of the board of education, died at his home, February 8, from heart disease

James Lloyd Wellington, M D, Swansea, Mass , Harvard Medical School, 1842, aged 98, a member of the Massachusetts Medical Society, believed to have been the oldest alumnus of Harvard Medical School and the oldest male resident of Massachusetts, for sixty-two years a practitioner of Swansea, assistant surgeon of the Seventh Massachusetts Infantry from 1840 to 1842, for one term a member of the Swansea school board, died at his home, February 11

Ralph Clark Apted, M D, Grand Rapids, Mich , University of Michigan, Ann Arbor, 1902, aged 39, a Fellow of the American Medical Association and a member of the Association of Military Surgeons of the United States, ranking major-surgeon in the Medical Corps of the Michigan National Guard, city physician of Grand Rapids for eleven years, a veteran of the Spanish-American War, died at his home, February 13, from carcinoma of the pancreas

Albert W Fisher, M D, Toledo, Ohio, Jefferson Medical College, 1860, aged 80, a member of the Ohio State Medical Association, surgeon of the Fifty-Seventh Pennsylvania Volunteer Infantry during the Civil War, for several years health officer of Toledo, formerly physician to the United States Marine Hospital, Toledo, and surgeon of the port of Toledo, died at his home, February 4, from bronchopneumonia

Emanuel Oscar Stuckey, M D, Albuquerque, N M , University of Nashville, Tenn 1903, aged 47, formerly of Atlanta, Ga, and later assistant physician at the Valmora Sanatorium, Watrous, N M , while suffering from despondency on account of tuberculosis, died February 3, in his apartment from the effects of poison, believed to have been self-administered with suicidal intent

Edward Everett French, M D, Bentleyville, Pa , Jefferson Medical College, 1887, aged 50, a member of the Medical Society of the State of Pennsylvania, secretary of the Ellsworth Board of Health, president of the First National Bank of Bentleyville, a practitioner and pharmacist, died in the Suburban General Hospital, Bellevue, Pa, February 10

George Henry Schwinn, M D, Washington, D C , Columbian University, Washington D C, 1898, aged 42, a member of the Washington Society of Nervous and Mental Diseases, first assistant physician at the Government Hospital for the Insane, Washington, D C, and a member of the staff of the institution since 1898, died in his apartments at the hospital, February 6

Arthur Eugene Evans, M D, Columbus, Ohio, Miami Medical College, Cincinnati, 1882, aged 59, a Fellow of the American Medical Association, for ten years a member and once president of the city council of Columbus, once a member of the board of health and city physician, died at his home, February 7, from carcinoma of the throat

Arthur R Russell, M D, Hamler, Ohio, Eclectic Medical Institute, Cincinnati, 1898, aged 42, local surgeon of the D T and I Railway, for eight years mayor of Hamler, died at his home, December 12, from the effects of a gunshot wound, self-inflicted, it is believed, with suicidal intent while mentally unbalanced on account of overwork

Leonard L Bennett, M D, Owatonna, Minn , Rush Medical College, 1862, aged 76, a practitioner and president of the National Farmers' Bank of Owatonna, for four years coroner of Steele County and for many years a member of the board of county commissioners and school board, died at his home, February 3, from pneumonia

Henry Clay Bostwick, M D, Vancouver, Wash , Rush Medical College, 1874, aged 84, a pioneer practitioner and druggist of Chehalis and Tacoma, Wash , major-surgeon of the Ninth Kansas Volunteer Cavalry during the Civil War, for nearly twenty years a resident of Vancouver, died at his home, February 1

Henry Ward Gregory, M D, West Philadelphia, Medico-Chirurgical College of Philadelphia, 1899, aged 43, a Fellow of the American Medical Association, formerly a member of the staff of the Hazleton (Pa) State Hospital, for fifteen years a practitioner of West Philadelphia, died at his home, February 11

Jacob Stewart Martin (license, Indiana, years of practice, 1897), aged 82, for fifty-one years a practitioner of Rolling Prairie, Ind , died at the home of his son in South Bend, Ind, January 30, from pneumonia

Obadiah Hendricks, M D, Macon, Miss , Tulane University, New Orleans, 1853, aged 94, said to have been the oldest alumnus of Tulane, an honorary member of the Lauderdale County (Miss) Medical Society, died at the home of his daughter in Meridian, Miss, about February 7

Lewis A Davis, M D, Berea, Ky , St Louis College of Physicians and Surgeons, 1899, aged 41, a member of the Kentucky State Medical Association, local surgeon at Berea for the Louisville and Nashville Railroad, and city health officer, died at his home, February 4, from pneumonia

Elisha C Etchison, M D, Gaithersburg, Md , University of Maryland, Baltimore, 1874, aged 68, a member of the Medical and Chirurgical Faculty of Maryland, once representative in the legislature from Montgomery County, died in a hospital in Washington, February 5

James E Bumstead, M D, Dundee, Ill , Northwestern University Medical School, Chicago, 1880, aged 67, a practitioner of Dundee since his graduation and one of the most beloved practitioners of Kane County, died at his home, February 15, from pneumonia

Phares James Dukeshire, M D, Brooklyn, Long Island College Hospital, Brooklyn, 1909, aged 29, an official of the Brooklyn Board of Health and adjunct physician to the Polhemus Clinic, died at his home, February 8, from pneumonia

Charles William Watt, M D Long Island College Hospital, Brooklyn, 1883, aged 56, for a long time surgeon for the A S and R Railroad at Chihuahua, Mexico, died in Providence Hospital, El Paso, Texas, January 1, from pneumonia

Thomas J Wells, M D, Davis, Okla , Eclectic Medical Institute, Cincinnati, 1890, aged 49, a member of the Oklahoma State Medical Association, until 1913 a practitioner of Erick, died at his home, January 20, from cerebral hemorrhage

George S Wheeler, M D, Waukegan, Ill , Rush Medical College, 1850, aged 87, who practiced for a few years in Chicago and then moved to Waukegan where he kept a book shop for half a century, died at his home, February 20

Oliver Hazard Jones, M D Miami Medical College, Cincinnati, 1875, aged 72, a member of the Indiana State Medical Association and a pioneer practitioner of Montgomery County, Ind , died at his home in Crawfordsville, January 30

William A Bell, M D University of Pennsylvania, Philadelphia, 1873, aged 65, a member of the Medical Society of Virginia and a widely known practitioner of the Shenandoah Valley, died at his home in Winchester, Va , January 29

Jabez Dean Hammond, M D., Chicago, Rush Medical College 1885, aged 55, a Fellow of the American Medical Association since 1893 house physician at the Congress Hotel, Chicago, died at his home, February 15, from uremia

George W H Williams, M D Philadelphia University of Medicine and Surgery, 1869, aged 79, an eclectic practitioner of North Grosvenordale, Conn , died at his home, January 29, from injuries received in a fall four weeks before

Calvin Emerick, M D Albany (N Y) Medical College, 1897, aged 45, formerly health officer of Ulster, N Y , state fish and game warden for Ulster County, N Y , died at his home in Glasco, N Y, January 26, from pneumonia

Thomas Wilkinson Burke, M D Georgetown University, Washington, D C, 1884, aged 67, died in the United States Pension Bureau, Washington, November 15, from chronic nephritis and acute cardiac dilatation

Charles S Brown, M D Medical College of Georgia, Augusta, 1890, aged 54, a member of the Florida State Medical Association, died at his home in Live Oak, Fla., January 27, from cirrhosis of the liver

Jocelyn William Blackmer, M D University of Maryland, Baltimore, 1915, aged 28, intern at the Springfield State Hospital, Sykesville, Md , died at the home of his mother in Salisbury, N C., February 1

Patrick D Connolly, M D Missouri Medical College, St Louis, 1885, aged 53, formerly a member of the Missouri State Medical Association, died at his home in St. Louis, January 30, from pneumonia

William Alexander Marbury, M D University of Maryland, Baltimore, 1867, aged 74, formerly of Woodville and Aquasco, Md , died at the home of his sister in Laurel, Md, February 3

George P Rider, M D, Wilmette, Ill, Albany (N Y) Medical College, 1888, aged 51, who abandoned practice after a short time for mining interests, was shot in Denver, February 9, and died two days later from pneumonia

Walter H Mayhew, M D, Sabillasville, Md, University of Maryland, Baltimore, 1901; aged 37, formerly demonstrator of histology and embryology in his alma mater, died in Baltimore, December 13, from pulmonary tuberculosis

Mary Lucinda Dunlap, M D, Des Moines, Iowa Iowa Eclectic Medical College, Des Moines, 1888, aged 59, professor of physiology in her alma mater, died in the Iowa Lutheran Hospital, Des Moines, February 5

James Brown, M D, Ashton, Ill, Rush Medical College, 1862, aged 84, surgeon of the Sixty-Sixth Illinois Volunteer Infantry throughout the Civil War, a practitioner of Ashton since 1868, died at his home, January 23

John G Ryerson, M D, Boonton, N J, College of Physicians and Surgeons in the City of New York, 1860, aged 82, a member of the Medical Society of New Jersey, formerly a druggist, died at his home, February 10

Cornelius Baldwin, M D University of Pennsylvania, Philadelphia, 1861, aged 78, surgeon in the Confederate service during the Civil War, died at his home in Winchester, Va., January 29

John H Johnson, M D Georgia College of Eclectic Medicine and Surgery, Atlanta 1906, aged 39, of Falco, Ala, was shot and killed about 18 miles south of Andalusia, Ala, January 8

John A. Masterson, M D Rush Medical College, 1871, aged 72, a member of the State Medical Society of Wisconsin, died at his home in Watertown, Wis, February 8

Thomas Hayes Derrick, M D Meharry Medical College, Nashville, Tenn, 1913, aged 39, a practitioner and druggist of Nashville, Tenn, died in Phoenix, Ariz, January 30

Charles E Scholes, M D University of Tennessee, Nashville, 1892, a member of the Kentucky State Medical Association, died at his home in Lowes, Ky., February 5

John Mills Minter, M.D Northwestern University Medical School, Chicago, 1909, aged 33, died at his home in Burley, Idaho, December 31, from lobar pneumonia

Augustus Charles Post, M D Albany (N Y) Medical College, 1911, aged 27, of Catskill, N Y, was run over by a train at Catskill, January 2, and instantly killed

E Willard Wells (license, California Homeopathic Board, 1876), aged 82, also a pharmacist, died at his home in Eureka, Calif., January 29, from senile debility

W L Evans (license, Indiana, 1878), aged 86, for many years a practitioner of Washington and Noogootee, Ind, died at his home near Noogootee, February 1

William W Bell, M D Jefferson Medical College, 1858, aged 77, a veteran of the Civil War, died at his home in Chicago, November 27, from arteriosclerosis

Robert F Adams, M D University of Louisville, Ky, 1875, aged 78, of Sharpsville, Ky, died in Johnsonville, Ky, January 19, from lobar pneumonia

Edwin Behymer, M D Eclectic Medical Institute, Cincinnati, 1875, aged 68, died at his home in Cincinnati, January 31, from heart disease.

Thaddeus Lewis (license, Michigan, 1901), aged 66, an eclectic practitioner of Central Lake, Mich, died at his home, February 3, from pneumonia

Martin Kennedy, M D University of Pennsylvania, Philadelphia, 1868, aged 79, of Bartow, Fla, died in Jacksonville, Fla, January 28

George W Huey, M D University of Alabama, Mobile, 1891, aged 53, died at his home in Hartford, Ala, January 14, from nephritis

Robert Carey Buck, M D University of Maryland, Baltimore, 1874, aged 64, died suddenly at his home in Manassas, Va., February 1

Augustus Ralston, M D Ohio Medical College, Cincinnati, 1881, aged 70, died at his home in New Corydon, Ind, February 6

Alfred L Laliberte, M D Laval University Quebec, 1904, aged 39, died at his home in Minneapolis, February 5, from pneumonia

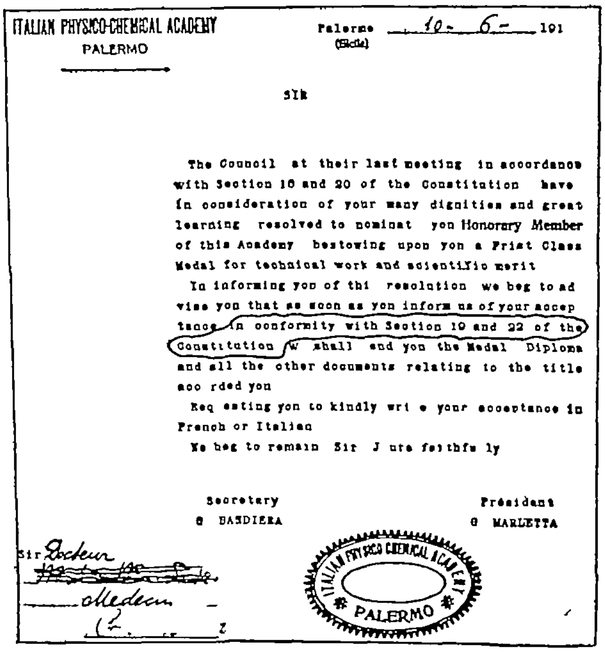
Dirk Van Kolken, M D Netherlands about 1866, aged 79, died at his home in Grand Rapids, Mich, January 7, from gastritis

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE ITALIAN PHYSICO-CHEMICAL ACADEMY

Many and various are the letters received by The Journal asking for information about an alleged scientific organization in Italy styled *l'Académie Physico-Chimique Italienne* This Italian Physico-Chemical Academy is operated from Palermo, Italy Here is the scheme Dr John Doe, an American physician receives an imposing-looking letter bearing the Palermo, Sicily, postmark and addressed to '*Monsieur le Docteur John Doe, Médecin*' On opening the letter *Monsieur le Docteur*" finds that the "Council" of *l'Académie Physico-Chimique Italienne* has nominated him "Honorary Member of this Academy" and furthermore has bestowed on him 'a First Class Medal for technical work and scientific merit" All this, "in consideration of your many dignities and great learning" Dr Doe is told that as soon as he will write an acceptance of this honor "in conformity with Section 19 and 22 of the Constitution" he will be sent "the Medal, Diploma and all the other documents relating to the title accorded" The joker in the scheme lies in the necessity for Dr John Doe 'conforming" with 'Section 19 and 22 of the Constitution" Here are the sections



ITALIAN PHYSICO-CHEMICAL ACADEMY
PALERMO

Palermo (Sicile) 10-6-191

Sir

The Council at their last meeting in accordance with Section 10 and 20 of the Constitution have in consideration of your many dignities and great learning resolved to nominat you Honorary Member of this Academy bestowing upon you a First Class Medal for technical work and scientific merit

In informing you of thi resolution we beg to advise you that as soon as you inform us of your acceptance in conformity with Section 10 and 22 of the Constitution w shall end you the Medal Diploma and all the other documents relating to the title acco rded you

Req esting you to kindly wri e your acceptance in French or Italian

We beg to remain Sir J urs faithfu ly

Secretary
G BANDIERA

Président
G MARLETTA

Sir Docteur
~~[illegible]~~
Medecin
12 z

Reduced photographic reproduction of the stock letter sent to American physicians by the Italian Physico Chemical Academy The joker" lies in the requirement around which we have drawn a line

Sec 19—The entrance fee to cover office and postal expenses, including postage of diploma is 5 Dollars, and is payable once at the admission to the Academy by special bulletin filled up stamped and signed

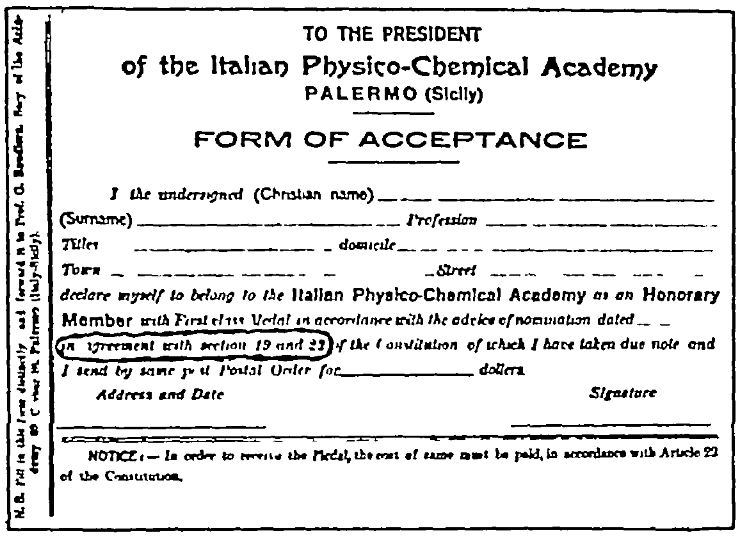
Sec 22—Those to whom medals are awarded and who wish to possess them must pay for their coinage 10 Dollars as the Academy does not at present possess the necessary funds for this purpose.

In short the whole thing means that if Dr Doe is willing to send $15 in good American money he will receive in due time from the academy a "diploma" and a gilt (not gold) medal

About four years ago when the "Academy" seemed to be making a particularly heavy bid for American dollars the member of The Journal staff in charge of the Propaganda

Department wrote to the "Academy," on his personal stationery, asking about the cost of membership in the "Academy" and asking also for a copy of the "prospectus" And that was all! In reply he received a letter stating that "in consideration of" his "many dignities and great learning" he had been nominated "an officer of this academy" and had been awarded *"la médaille de première classe"* for humanitarian work and scientific merit In order to obtain these tokens of the "Academy's" regard it would be necessary to inform the "Academy" of acceptance "in conformity with Section 19 and 22 " As the Propaganda Department did not consider the diploma and gilt medal worth $15 even as an exhibit for its museum of fakes, the "Form of Acceptance" was not filled in and returned "in accordance with Section 19 and 22"

The leading spirits in the operation of this diploma and medal mill are D and G Bandiera who, so far as we can learn, are neither physicians nor pharmacists nor have any scientific standing The "Academy" has been referred to at various times[1] by The Journal



TO THE PRESIDENT
of the Italian Physico-Chemical Academy
PALERMO (Sicily)

FORM OF ACCEPTANCE

I the undersigned (Christian name) ______
(Surname) ______ *Profession* ______
Titles ______ *domicile* ______
Town ______ *Street* ______
declare myself to belong to the Italian Physico-Chemical Academy *as an* Honorary Member *with First class Medal in accordance with the advice of nomination dated* ______ *in agreement with section 19 and 22 of the Constitution of which I have taken due note and I send by same post Postal Order for* ______ *dollars*
Address and Date ______ *Signature* ______

NOTICE: — In order to receive the Medal, the cost of same must be paid, in accordance with Article 22 of the Constitution.

Photographic reproduction (reduced) of the 'Form of Acceptance' to "membership" in the 'Italian Physico Chemical Academy " Filling out this blank and sending it *with $15 00* to the "Academy" will bring the gilt medal and "diploma "

TANLAC

"Tanlac" is a sky-rocket in the pyrotechnics of fakery It is at present making a brave display with much noise and many sparks, the stick will come down in due time Tanlac is another of the increasingly popular alcoholic nostrums that presumably fill a much felt want—want, not *need*—in those parts of the country where Demon Rum has been driven into the tall timbers It was first exploited in the South—naturally This department paid its respects to Tanlac in the issue of June 5, 1915[2] The advertising campaign of this product has, apparently, reached Michigan and the Dairy and Food Department of that state in Special Bulletin No 50, published Feb 12, 1916, has something to say about Tanlac under the title "The Latest Cure-All" As we still have a good many inquiries regarding Tanlac it seems worth while to reprint the report of Food Commissioner Helme of Michigan on the product The findings of the Michigan chemists agree essentially with those of the Association's chemical laboratory Here, in part, is the Michigan report

"A new panacea for the cure of 'all ailments of the stomach, kidneys and liver, catarrhal affections of the mucous membranes, rheumatism, nervous disorders and the like' is offered to the public under the name of Tanlac The label on the bottle neatly avoids the pure drugs act by claiming to be only a 'tonic and system purifier' An analysis of Tanlac in the laboratory of this Department shows the following

"Alcohol	16 4 per cent.
"Glycerin	2 0 per cent.
"Licorice	Present
"Aloes or Cascara	Present
"Gentian	Present
"Alkaloids (Berberin)	Trace

"The presence of a trace of tartaric acid shows that wine is the base of this medicine The 16 per cent alcohol gives it the 'kick' that makes a fellow feel good and ought to fill a long felt want in 'Dry Counties' Aloes is a laxative Gentian is a bitter drug, a so-called tonic If the reader wants to be cured by the Tanlac route at one-fourth the expense, let him get a quart bottle of good sherry wine Then go to the local druggist and get 1¼ drams of glycerin and 2 drams each of aloes, gentian, licorice and cascara Mix (if you wish) and you will have Tanlac so near that neither you nor the manufacturer can tell the difference This formula will give four times the quantity found in an ordinary $1 bottle of Tanlac "

Correspondence

The Value of Contesting a Hopelessly Fatal Issue

To the Editor —The recent appearance of a valuable article by Reilly, on "The Signs and Symptoms of Impending Death" (The Journal, Jan 15, 1916, p 160), suggests forcibly those questions which center around the familiar conservative principle that governs the physician, in theory at least, in the face of such an issue The "Cui bono?" cannot be escaped, whether we ask it of ourselves, or meet it in the person of our patients' relatives, in our friends, or in our own flesh and blood

Setting aside for the moment the ethical and social aspects of euthanasia, which after all we answer so easily in generalities and with such difficulty when we confront the specific case, it is worth while for the moment to weigh a less familiar aspect of the value of a physician's futile struggle against what was, from the start, an inevitably fatal issue

Issues in medicine whose hopeless outcome can be immediately foreseen are few But by indefinite gradations, impending death seems to pass from an ultimate to an immediate certainty in all of the diseases which profoundly change the parenchymatous structure of important organs It is this indefinite gradation from ultimate to immediate which, in a final analysis, deprives us of the right to draw the line at which our efforts to conserve shall stop The lapse into a fatalistic, calm acceptance of the fact of impending death is none the less only too easy for us in these last stages—made easier for us by the friends, and perhaps easiest of all by the patient himself It seems a ruthless thing even where there is no pain, not even consciousness, to harry the body back to life It demands, too, a vigilance, an energy, a determination, a resource, which exhausts the one who brings it to bear It burns time and consumes nerve Not without reason do we rate the bringing in of life and the fighting of imminent death as the hardships of the career There comes to every man the temptation to let go The ethic of the work slips from him, it seems a needless thing to drag this body back once more for a precarious minute or hour, to be the agony of friends and to sap the living in the process of dying He lets the hopeless battle be lost by his own unconscious choice, and the spirit returns unto God who gave it

But somewhere in this gentle sophistry to which we yield ourselves, we have missed contact with a vital thing The fight against impossible odds is a maker of character The man in whom it is not bred, bone of bone, is unseasoned The man who declines to make it is unsafe or overripe We can appeal to ourselves for death To every one of us there may come a time when we appeal to the physician for life.

The struggle against certain death is a form of preparation for the service of the living Into whose hands do we commend the critical case, the issue of a life precious to us? We yield it into the hands of the man of whom battle is a part, to whom surrender is unknown for whom artificial respiration, oxygen, intravenous stimulation and all the paraphernalia of desperation are old friends, rather than untried servants in the house of his resources To the man who never left a man to die, we commend ourselves *in extremis* if life still seems good To the training of such men the hopeless death-bed can contribute the unique, seasoning touch that perfects their skill The hopeless conveys to such seasoned men no impulse to surrender As in chess, so in the fight for life, the lost game makes the player

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[1] The Journal A M A, June 29, 1907, p 2196, Oct 21, 1911 (Berlin letter and editorial), May 11, 1912, p 1455, March 8, 1913, p 770, May 10, 1913, p 1480, Nov 8, 1913, p 1737

[2] The Journal's article on Tanlac has been reprinted in the pamphlet, "Miscellaneous Nostrums," price 10 cents

To every physician there come many such critical moments, in which he recognizes and confronts the inevitable. If, especially in his earlier experience, he gives ground before it, he has lost a priceless heritage The going down to death only seldom must mean pain to the dying in these days To oppose it when the struggle means unrelievable agony is perhaps too much to ask. But in those cases in which this need not be, to summon every resource of skill and personality, and in his shirt-sleeves, with the sweat running into his eyes, to fight to stave off another's dissolution, makes a man Here often for the first time one attains to the true appreciation of the capacity of the body to rally to its own defence, and to the first understanding of the possibilities of digitalis and atropin He who has not brought back the seemingly dead to life, only to lose hardly in the end, fighting to the last ditch, has not won his spurs

It is in the air of some wards and of some hospitals to watch an impending death almost with resignation The young physician who breathes such contagion weakens in the knees The dying turn black before him, and go down to the River Styx, crying out for help, and he stands by, lacking both the impulse and the knowledge for effective response Many a worth-while life will slip through that man's hands before his course is run Another, trained to a more far-sighted ideal, springs into sudden, well-directed action, and drags back the limp figure from the World of Shades, if only for an hour The last man has, by the fight, added a cubit to his stature

It is the service of inevitable death to school us for the defense of life, and only to those who have met and striven against it, even though to their own ultimate defeat, comes the power to give life where there is still hope Let us rid ourselves of sophistry, at least on those occasions when, as physicians, we must measure up to the words of the Apocrypha, spoken of each one of us "Yea, there is a time when in his hands is the issue of life "

JOHN H. STOKES, M D., Chicago

The Kinetic Drive

To the Editor —In response to the statement of Dr Pike (Correspondence, THE JOURNAL, Feb 19, 1916, p 591) I beg leave to confine myself to the two points that have been more objectively discussed

With reference to the action of the iodin compound of the thyroid in the animal organism, the belief is expressed that "a misstatement of fact" was made in our commentary In effect we expressed the opinion that it is superficial reasoning to pass so readily from observed facts about the influence exerted on electrical permeability of cells by sodium iodid, which by dissociation yields iodin ions, to the conclusion that an organic iodin compound, which contains "masked" or undissociable iodin, has the same influence If there is "a misstatement of fact" in this, it must be about the undissociable iodin To be brief *There is nothing* in Scudder's tables which indicates that the dissociation involves the ionization of iodin in those and organic compounds which Dr Pike mentions It is permissible to deduce from the principles of physical chemistry accepted at present that the dissociation in these acid compounds which he mentions occurs in the carboxyl group, it is customary for writers on physical chemistry to refer to an element, bound as iodin is in these compounds, and most likely in the thyroid compounds also, as undissociable, Dr Pike adduces nothing to show that it is not permissible to continue to refer to elements so bound in 'masked' form as undissociable But even though it ever should develop that we are in error about this, is not our comment justified by its evident object, namely to urge the desirability of applying experiment to the settlement of this question about the thyroid substance?

It was not necessary to point out the stimulating effect of free hydrogen ions on the respiratory center and their contrast effect on the cortical cells It serves the intent of our comment on this matter to have these points reinforced It is this contrast of effects in different parts of the nervous system which shows the unreasonableness of ascribing the rise of nerve impulses to difference of electric potential between different points on the neuromuscular apparatus If the nerve impulses from the cerebral cortex owe their origin to a different potential between the cortex and the nerve end-organ, the impulses from the respiratory center must also depend on a difference of potential between the center and respiratory muscles—unless the nerve impulses in these two mechanisms are fundamentally dissimilar For the present we adhere to the old-time notion that all nerve impulses are fundamentally similar If increased hydrogen-ion concentration abolishes the difference of potential between the cortex and muscles, it must do the same thing between the respiratory center and muscles But in the cortex greater concentration of hydrogen ions causes paralysis of the cells, while in the respiratory center it causes greater excitation, how does the latter phenomenon comport with the view that the rise of nerve impulses is due to difference of electric potential? Or how again are we to account for afferent nerve impulses—unless again they are fundamentally dissimilar to motor nerve impulses?

ALBERT WOELFEL, M D., Chicago

Esperanto and the War

To the Editor —In connection with the item on this subject (THE JOURNAL, Feb 5, 1916, p 439), allow me to invite attention to the further activities of Esperantists, and to the value and use of Esperanto in the present war Esperantists have sent several fully equipped Red Cross Esperanto ambulances into the field, with personnel Esperanto is being taught in the prison and internment camps, so that there may be a "common" language. There is an Esperanto "repatriation" bureau maintained in Geneva, Switzerland, through which disrupted families are brought together, correspondence forwarded, and much other good of a like nature accomplished Statements relating to "justification" for the war were issued in Esperanto by governments, notably the German, which also issued official war bulletins in Esperanto, for international distribution Keys, weighing but 5 grams, though containing the elements of the language and a vocabulary of more than 2,000 words, are published in practically all languages, for international conversational and correspondence purposes A similar series of Esperanto Red Cross booklets is published, and much other work is being accomplished along these lines

In short, Esperanto is proving its great value for its intended purposes, and it is the best passport in the warring countries that one may possess

Mil faktoj atestas la meriton praktikan de la nomita lingvo

H W YEMANS, M D, Fort Warren, Boston
First Lieutenant, M R C, U S Army

Constipation in Causation of Epilepsy and Migraine

To the Editor —I have read with a great deal of interest Dr Reed's articles on epilepsy His theory of an edema of the subcortical nerve tracts, accompanying or following a condition of general acidosis, which in turn results in some way from stasis of the bowel contents, seems to be a real step in the right direction

But it has occurred to me, as it doubtless has to others, that this fails to account for the symmetrical manifestations of the typical attack of epilepsy A symmetrical edema of both internal capsules is of course possible, but shall we say it is probable?

This theory would more nearly account for a typical attack of migraine, with its unilateral headache, hemianopsia, diplopia, paresis of the opposite extremities, and occasional motor aphasia in left hemicrania Practically all migrainous patients are constipated, and practically all are relieved by large doses of sodium bicarbonate

This is written, not in the spirit of criticism, but as a query, that more light may be thrown on these remarkable diseases

L K Strate, M D, Sutton, Neb

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

GENOFORM

To the Editor —Kindly inform me as to the composition of genoform, manufactured by C Bischoff & Co, New York It is not mentioned in New and Nonofficial Remedies Please do not mention my name in The Journal.

E A C

Answer —Genoform, advertised as a remedy for gout, rheumatism, neuralgia, etc, is said to be "O- oxybenzoic acid methylene acetate, $C_{10}H_{10}O$," "a glycolester resulting from the interaction of acetyl-salicylic acid and formaldehyde" The manufacturers claim that it is split up in the intestines into salicylic acid, acetic acid and formaldehyd The statement of composition is too indefinite to permit any real insight into its possible reactions Even if formaldehyd were liberated in the intestines, however, it could not form combinations with the excess uric acid found in the system of gouty patients, and could not therefore exert the "antiarthritic properties" as claimed

LITERATURE ON PEPYS' DIARY

To the Editor —Can you give me any information concerning medical articles, historical or otherwise, dealing with Mr Samuel Pepys of diary fame? The diary is of extreme interest to physicians, as it contains a complete description of the London plague and many references to experiments performed before the Royal Society

J W D, M D, Baltimore

Answer —The following is a list of references to articles on this subject

Geikie, A Samuel Pepys and the Royal Society, *Nature,* London, 1904 1905, lxxi, 415

Power, D A An Address on the Medical History of Mr and Mrs Samuel Pepys, *Lancet* London, 1895, i, 1357 Who Performed Lithotomy on Samuel Pepys? ibid, 1904, i, 1011 An Address on Why Samuel Pepys Discontinued His Diary, ibid, 1911, i, 1687, Samuel Pepys and the Royal Society *Brit Med Jour*, 1912, ii, 184

Carmichael, A R The Eyesight of Samuel Pepys, *Lancet,* London, 1911, ii, 124

Some Sidelights on Medicine in the Seventeenth Century (from the Diary of Samuel Pepys) *Univ Med Rec* London, 1914, x, 406

Rogers, J F Science from the Pages of Samuel Pepys, *Med Times, 1914,* xlii, *340*

PYRAMIDON

To the Editor —Kindly advise me as to the chemical composition and physiologic action of pyramidon

R Lloyd Smith, M D, Portland, Ore

Answer —Pyramidon is fully described in New and Nonofficial Remedies, 1916, p 225 Pyramidon is known chemically as phenyl-dimethyl-dimethylamino-pyrazolon It differs from antipyrin in that a dimethylamino group has replaced a hydrogen atom of the pyrazolon nucleus Pyramidon acts as an antipyretic and anodyne, like antipyrin, but is effective in small doses Like other antipyretics, it should be cautiously employed in the treatment of infectious fevers

EXCHANGE OF MEDICAL BOOKS

To the Editor —In my struggle to keep up with the progress of medicine, I have often wondered why the progressive publishers of medical books do not offer some exchange plan which would enable a physician to keep an up to date library without prohibitive cost It seems to me that the prices now charged for medical works are sufficiently large to enable the publishers to give us some credit for the old book in exchange for a later edition or revision Perhaps some suggestion along this line from The Journal would be followed by the publishers to our mutual advantage

J F Mixon, M D, Valdosta, Ga

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona Phoenix, April 4 5 Sec., Dr John Wix Thomas, 200 National Bank of Arizona Bldg, Phoenix

California Los Angeles, April 4 Sec, Dr Charles B Pinkham, Room 527 Forum Bldg, Sacramento

Colorado Denver, April 4 Sec., Dr David A Strickler, 612 Empire Bldg, Denver

Connecticut Regular, New Haven, March 14 15 Sec, Dr Charles A Tuttle, 196 York St, New Haven, Homeopathic, New Haven, March 14 Sec, Dr Edwin C M Hall, 82 Grand Ave, New Haven, Eclectic, New Haven, March 14 Sec, Dr T S Hodge, 19 Main St, Torrington

Florida Homeopathic, Jacksonville, March 10 Sec, Dr J B Griffin, St Augustine

Idaho Boise, April 4 Sec, Dr Charles A Dettman, Burke

Maine Portland, March 14 15 Sec, Dr Frank W Searle, 776 Congress St, Portland

Massachusetts Boston, March 14 16 Sec., Dr Walter P Bowers, Room 501, No 1 Beacon St, Boston

Minnesota Minneapolis, April 4 7 Sec, Dr Thomas S McDavitt, 814 Lowry Bldg, St Paul

Missouri St Louis, March 20 22 Sec, Dr J A B Adcock, State House, Jefferson City

Montana Helena, April 4 Sec, Dr William C Riddell, Helena.

Porto Rico San Juan, April 4 Sec, Dr Quevedo Baez, 66 Allen St, San Juan

Rhode Island Providence, April 6 Sec., Dr Gardner T Swarts 315 State House, Providence

Utah Salt Lake City, April 3 4 Sec, Dr G F Harding, 407 Templeton Bldg, Salt Lake City

Wyoming Laramie, March 14 16 Sec, Dr H E McCollum, Laramie.

New York May-June Report

Mr H H Horner, chief of the Examinations Division of the New York State Board of Medical Examiners, reports the written examinations held at Albany, Buffalo, New York and Syracuse, May 28-29 and June 29-July 2, 1915 The total number of subjects examined in was 8, total number of questions asked, 80, percentage required to pass, 75 The total number of candidates examined was 474, of whom 387 passed, including 3 osteopaths, and 87 failed, including 3 osteopaths Fifteen candidates were licensed on the indorsements of credentials The following colleges were represented

PASSED

College	Year Grad	Total No Licensed
Denver and Gross College of Medicine	(1910)	1
Georgetown University	(1913)	1
George Washington University	(1910)	1
Howard University	(1911)	1
Northwestern University	(1911)	1
University of Illinois	(1914)	1
University of Louisville	(1911)	1
Tulane University of Louisiana	(1908)	1
College of Physicians and Surgeons Baltimore	(1914)	1
Johns Hopkins University	(1912, 2) (1913) (1914) (1915 9)	13
University of Maryland	(1911)	1
Boston University	(1912)	1
Harvard University	(1913) (1915)	2
Tufts College Medical School	(1913, 2) (1915)	3
University of Michigan Medical School	(1915)	1
Albany Medical College	(1913, 3) (1914, 6) (1915, 24)	33
Columbia University, College of Physicians and Surgeons	(1911, 2) (1912, 2) (1913, 3) (1914, 7) (1915, 31)	45
Cornell University	(1912) (1913, 2) (1914, 2) (1915, 8)	13
Fordham University	(1912, 2) (1913) (1914) (1915, 11)	15
Long Island College Hospital	(1912, 3) (1913, 2) (1914, 5) (1915, 59)	69
New York Homeo Medical College and Flower Hospital	(1913, 3) (1914, 3) (1915, 13)	19
New York *Medical College and Hospital for Women*	(1915)	3
Syracuse University	(1912) (1914, 2) (1915, 8)	11
University and Bellevue Hospital Medical College	(1913, 4) (1914, 2) (1915, 50)	56
University of Buffalo	(1914, 4) (1915, 50)	54
Hahnemann Medical Coll and Hosp, Philadelphia	(1912)	1
Jefferson Medical College	(1913, 3) (1914) (1915)	5
Medico Chirurgical College of Philadelphia	(1914)	1
University of Pennsylvania	(1913) (1914) (1915)	3
Woman's Medical College of Pennsylvania	(1915)	3
University of Nashville	(1909)	1
Vanderbilt University	(1909) (1912)	2
University of Vermont	(1912)	1
University of Virginia	(1911) (1913)	2
Queens University	(1909) (1911, 2) (1915)	4
University of Toronto	(1913) (1915)	2
Laval University, Quebec	(1900)	1
McGill University	(1906) (1913) (1915, 2)	4
University of Prague	(1906)	1

University of Jena	(1909)	1
University of Tubingen,	(1911)	1
University of Naples	(1912) (1913)	2
University of Geneva	(1913)	1

FAILED

Georgetown University	(1913)	1
Howard University	(1911)	1
Illinois Medical College	(1898)	1
University of Louisville	(1912)	1
Baltimore Medical College	(1913)	1
College of Physicians and Surgeons Baltimore	(1912)	1
Johns Hopkins University	(1910) (1914)	2
Tufts College Medical School	(1905)	1
Detroit College of Medicine and Surgery	(1911) (1913)	2
University of Michigan Homeo Med School	(1914) (1915)	2
Albany Medical College	(1913) (1914 6) (1915, 2)	9
Columbia Univ Coll of Phys and Surgs	(1914) (1915 5)	6
Eclectic Med Coll of the City of New York	(1910)	1
Fordham University	(1913) (1914 3) (1915 6)	10
Long Island College Hospital	(1913) (1914) (1915 3)	5
New York Homeo Medical College and Flower Hospital	(1912) (1913) (1914 5) (1915 6)	13
New York Medical College and Hospital for Women	(1915)	1
Niagara University	(1898)	1
Syracuse University	(1913 2) (1915)	3
University and Bellevue Hosp Med Coll	(1914) (1915 2)	3
University of Buffalo	(1911) (1914 2) (1915 2)	5
Jefferson Medical College	(1909) (1912 2)	3
Medico Chirurgical College of Philadelphia	(1902)	1
University of Pennsylvania	(1890)	1
Woman s Medical College of Pennsylvania	(1915)	2
University of Vermont	(1914)	1
McGill University	(1902)	1
University of Berlin	(1914)	1
University of Catania	(1912)	1
University of Naples	(1905) (1909)	2
Syrian Protestant College	(1912)	1

LICENSED THROUGH RECIPROCITY

College		Year Grad	Reciprocity with
Hahnemann Medical College and Hospital Chicago		(1905)	Wisconsin
College of Physicians and Surgeons Baltimore		(1908)	New Jersey
University of Maryland		(1911)	Delaware
Columbia University, College of Phys. and Surgs		(1901)	New Jersey
N Y Homeo Med Coll. and Flower Hosp	(1912)	(1913)	New Jersey
Medico-Chirurgical College of Philadelphia		(1914 2)	Delaware
University of Pennsylvania		(1901)	New Jersey
Woman s Medical College of Pennsylvania		(1902)	Indiana
Medical College of Virginia	(1901)	(1913)	Virginia
University of Berlin		(1899)	Utah
University of Pisa		(1910)	Ohio

Connecticut November Report

Dr Charles A Tuttle, secretary of the Connecticut Medical Examining Board reports the oral, practical and written examination held at New Haven, Nov 9-10, 1915 The total number of subjects examined in was 7, total number of questions asked, 70, percentage required to pass, 75 The total number of candidates examined was 29, of whom 21 passed and 8 failed Five candidates were licensed under an exemption clause The following colleges were represented

PASSED

College		Year Grad	Per Cent.
Yale University	(1913) 79	(1915)	76 9
College of Physicians and Surgeons Baltimore		(1913)	77 1
Johns Hopkins University	(1906) 76 9 (1912) 87 4	(1914)	84 8
University of Maryland		(1912)	79 4
Harvard Univ	(1912) 80 5 (1913) 75 6 (1914) 82 3	(1915)	78 2
Tufts College Medical School		(1913)	82 8
Albany Medical College		(1912)	83 2
Columbia University College of Phys and Surgs		(1915)	87 9
University and Bellevue Hosp Med Coll	(1903) 77 4	(1914)	79
Jefferson Medical College		(1913)	79 1
Medico Chirurgical College of Philadelphia		(1914)	76 1
Woman s Medical College of Pennsylvania		(1899)	80 1
University of Vermont		(1914)	80 2, 82 2

FAILED

College of Physicians and Surgeons Baltimore		(1910)	69 1
Eastern University*		(1913)	53 8
Maryland Medical College		(1913)	58 5
University of Maryland		(1913)	63 2
College of Phys and Surgs Boston	(1908) 56	(1910)	46 6
Meharry Medical College		(1913)	66 7
University of Budapest		(1898)	67 5

LICENSED UNDER AN EXEMPTION CLAUSE

College	Year Grad.	Total No Licensed
Johns Hopkins University	(1901)	1
Coll of Phys. and Surgs in the City of New York	(1889)	1
Syracuse University	(1896)	1
University of Buffalo	(1893)	1
McGill University	(1881)	1

* This college was officially reported as not recognized by the Maryland State Board of Medical Examiners

Book Notices

Disposal of Sewage. By Leonard Metcalf and Harrison P Eddy Volume 3 of American Sewerage Practice Cloth Price, $6 net. Pp 851, with 230 illustrations New York McGraw Hill Book Company, 1915

This volume is the third in a series by the same authors on American sewerage practice, the first being the design of sewers, and the second on the construction of sewers There are already two excellent books by American writers on sewage disposal—one by Kinnicut, Winslow and Pratt, the other by George W Fuller—and the question might be raised whether a third treatise on the same subject is needed within so brief a period after publication of the others New light, however, is being thrown almost daily on the subject of sewage treatment, and opinions and methods are changing so rapidly that any new and authoritative book in this field must prove valuable to practical workers This is especially the case with such a masterly summary as this one, enriched as it is with the authors' well-matured opinions Modern developments are described with a wealth of detail and a balanced judgment that can hardly be praised too highly There is little to criticize adversely We notice that certain aspects of the relation of bacteria to sewage disposal are handled somewhat gingerly, as might perhaps be expected from the fact that the authors' experience has been largely on the engineering side To judge from the discussion of the production of hydrogen sulphid by bacteria (p 100), the authors do not seem to be familiar with the important work of Redfield and of Lederer The lactose bile test for *Bacillus coli* (p 108) is apparently considered by the authors in a more favorable light than is warranted by the recent trend of opinion among water bacteriologists Considering the book in the most critical way, however, it must be regarded as a very valuable addition to the list of excellent American books on sewage treatment. The typography and illustrations are excellent A thin but good quality of paper is used, so that the volume of 850 pages is easy to handle and consult

An Autobiography By Edward Livingston Trudeau M D Cloth Price $2 Pp 322, with illustrations Philadelphia Lea & Febiger, 1916

One of the best known institutions devoted to the treatment of pulmonary tuberculosis is that at Saranac Lake, New York It is the result of the working out of an idea—the development of the best method of treating consumption, based on scientific observation, on practical clinical experience, and on laboratory research, especially with due regard to the needs of those of limited means But while the reputation of the institution is world-wide, few realize how extensive the Adirondack Cottage Sanitarium has become Most remarkable is the fact that, to all intents and purposes, the institution is the result of the indomitable energy, perseverance and altruistic labors of one man, and he suffering to such an extent that he was bedridden half the time, and daily fighting for his very life

Trudeau's autobiography is more than a story of his life, it is a history of the development and growth of the institution he created, as well as the newer, the modern methods of treating consumption The book, therefore, is of practical value to every physician interested in this disease But it is what Trudeau did for humanity, unselfishly and in spite of physical disability and other obstacles which few individuals would have overcome, that makes the book interesting and worth while And it is all told simply, and with a perfect effacement of the ego Those who knew Trudeau would expect this large hearted, unselfish to the extreme, giving credit to others when he, himself, deserved it

Trudeau was a pioneer, literally He went to the Adirondacks with a forlorn hope, and remained through that first winter almost alone, when all his friends told him it was suicidal to do so But he did not know what tremendous consequences would follow, he did not dream what was to result, what benefits to the consumptive would follow this experience at Paul Smith's

The great asset, the important factor, in the personality of Dr Trudeau, was a remarkable faculty of making and keeping friends This spelled success, this built the cottages, laboratories, the administration building, the three churches for which he was responsible Luck, fortune, his family connections, what you will, may have had something to do with it, but, after all, it was the personal equation, the man himself, that counted He had ideas which he wanted to carry out for humanity, which required money He was optimistic not only as to the possibility of carrying out these ideas, but also as to what good would result to humanity if they were carried out Luck may be credited with the fact that many of his friends were well-to-do, if not wealthy Harriman was a life-long and very close friend "I was always keenly interested in everything I undertook, and was by temperament an optimist" This tells the story He was intensely interested, his whole soul was in his work, and he was hopeful to the nth degree His earnestness and hopefulness were an inspiration to his friends to give "The generosity and readiness," he says, "with which people have given me money has ever been, and is even now, a matter of wonderment to me" It need not have been, in fact, a few pages farther on he says, "The personal element must enter to some extent into such work [that of securing funds] for all appeals to the public, no matter when or how well presented, which have been made at different times in print by friends of the institution have never met with the least response" It was the personal element, the plain yet beautiful character in that frail body which made possible the remarkable success of Edward Livingston Trudeau's life work

Even though one did not know the man, as one reads these happenings of the years as they pass in the life of Trudeau and his little family, the explanation of how he accomplished what he did is revealed

Modern Aspects of the Circulation in Health and Disease By Carl J Wiggers, M D, Assistant Professor of Physiology in Cornell University Medical College Cloth Price, $3 75 net Pp 378, with 104 illustrations Philadelphia Lea & Febiger, 1915

This book is divided into three sections The first discusses the physiology of the circulation in a comprehensive manner, bringing the subject up to date The second section discusses the graphic and instrumental methods used in the study of the phenomena of the circulation, describing in detail the string galvanometer and other modern and approved methods The third section discusses the pathologic conditions of the circulation, and tries whenever possible to correlate them with similar conditions produced experimentally The author consistently explains these diseased conditions by the existing pathologic physiology Although the work is somewhat technical and presupposes a good general knowledge of physiology, it should prove of value to the physiologist and the clinician desirous of being conversant with modern ideas of the circulatory disorders The value of the work is enhanced by the illustrations, and the bibliography at the end of each chapter

Pulmonary Acoustic Phenomena By C M Montgomery, M D, of the Henry Phipps Institute, and E A Eckhardt, Ph D, Department of Physics, University of Pennsylvania Tenth Report of the Henry Phipps Institute Paper Pp 117 Philadelphia Henry Phipps Institute, 1915

This is the report of "an investigation of some of the factors concerned in the origin and transmission of some of the sounds heard over the lungs in health and disease" The investigation has been carefully conducted by means of experiments, clinical observation with necropsy control, and a consideration of the laws and theories of physics The sounds discussed are the voice sounds and the breath sounds as heard in the normal and the consolidated lung, over excavations, pleural effusion and pneumothorax The book is not intended as a textbook on physical diagnosis It will interest those who desire to understand more fully the mechanism of the phenomena heard on listening to the normal or diseased lung It is a pleasure to see the high regard in which the pioneer work of Austin Flint is held, work not always accorded the great credit that it deserves

Miscellany

Industrial Medical Supervision

Large industrial concerns are beginning to adopt medical supervision, both as an economic measure as it affects the employers, and in the interest of the employees A pamphlet issued by the Eastman Kodak Company contains the address of its medical officer, Dr Guy L Howe, to the Rochester Chamber of Commerce. He describes the plan of organization of the medical work and some of the results The work is divided into physical examination, care of accidents, care of sickness, sanitary inspection and health publicity Every applicant for work who qualifies, by his own consent, undergoes a physical examination to determine his fitness for the work he expects to do This examination includes a study of the heart and lungs, a test of the eyes for astigmatism, colorblindness and near and far vision, and a test of the hearing Teeth, throat and neck are examined and a urinalysis is made Rupture, flatfoot, varicose veins, hemorrhoids and evidence of communicable diseases are looked for Vaccination is required in all who have not been successfully vaccinated within fifteen years Anemia is looked for and blood pressures taken when deemed necessary As instances of the findings among the 6,000 employees, it is said that moderate elevated blood pressure was found in 28, and serious in 42, or 1 1 per cent, moderate heart disease in 38 and serious in 18, or 0 77 per cent, ruptures (moderate) in 116 and severe in 39, or 2 57 per cent. Eight patients with tuberculosis are under treatment in sanatoriums or by open air methods at the expense of the company Poor teeth which should have the attention of the dentist were found in 90 per cent, and in 1,557, or 25 per cent of all employees, the dental defects were such that failure of treatment amounted to serious neglect By these methods of examinations carried out periodically, incipient defects are discovered, and they also afford a basis of comparison of the physical status of employees from year to year Instances are given in which the discovery of serious defects permitted the shifting of men to other work which they could do without injury Specially defective employees to the number of 281 are examined every six or twelve months, and all dining room employees every three months In accident cases the services of the company physician are available throughout until recovery, and hospital and consultation fees and the cost of roentgenograms are provided at company expense This procedure was effective before the enactment of the workmen's compensation law This law does not require the treatment of sickness among employees, but this constitutes a large part of the work of the medical department From fifty to a hundred cases of minor illness are said to be taken care of every day The department acts as a medical clearing house, determining when an employee is fit to remain at work and when he should be in bed Employees are recommended to employ their family physicians, as determined by two questions Would the man go to his physician if the department did not treat him, and could he afford to pay the necessary fee? A negative answer to either would determine treatment by the medical department It is said, however, that ten patients are placed in the hands of the local medical profession to one who is taken away Sanitary inspection each month has been arranged for in all factories, in dining rooms, workshops, washrooms, lockers, and of drinking water A monthly health bulletin is distributed to employees, and a health manual has been prepared

Laryngeal Ictus in Adults

E Jeanselme and C Lian discuss what they call the "ictus larynge des bronchitiques" in the *Bulletins de la Societé des hôpitaux* of Paris, 1915, xxxi, 571, relating two typical examples After a brief tickling in the throat and spasm of coughing, the face becomes congested, and the man falls unconscious for a few seconds, but then recovers promptly and goes on with what he had been doing before the seizure, apparently unharmed There was not the slightest sign of syphilis in one of the men, in the other there was probable syphilis but nothing to indicate tabes Both were inclined to congestion of the face, stout, with short necks, and were hard drinkers In Bedos' compilation of forty-three cases of nontabetic laryngeal ictus, only one patient was between 10 and 20, one between 20 and 30, nine between 30 and 40, fourteen between 40 and 50, and ten between 50 and 60 There was a history of gout in seven, obesity and diabetes once each The period of unconsciousness never lasts more than a minute or two, and there is no known fatality from this cause The spasm as described occurs in the course of bronchitis, and it seems to be a sudden inhibition of the action of the brain, a reflex consequence from peripheral irritation of the superior laryngeal nerve The disturbance in the circulation in the brain, to which some attribute the ictus, is only an accessory factor, Jeanselme believes In treatment and prevention, the main point is to reduce the excitability of the pneumogastric system, and for this atropin is required He gave small daily doses of atropin to his two patients, and there was no further ictus and the spasms of coughing were much attenuated Persons subject to these seizures should take atropin during periods when they are inclined to cough violently They should also lie down at once, to avoid a fall, whenever they feel the tickling in the throat, severe coughing spasm and mist before the eyes, warning of the impending ictus Siredey has reported the case of a healthy robust physician of 54 who had a slight cold, and in drinking a cup of tea "swallowed a drop or so the wrong way " This induced a violent coughing spasm, and he rolled from his chair to the floor, entirely unconscious for a minute or two There was slight malaise afterward and he vomited, but then resumed his daily work as usual There has been no repetition of the attack during the five years to date

Drug Medication

"The average physician's slavery to drug medication is difficult for intelligent minds to understand It is too closely associated with the methods of dishonest quackery to be comfortable under scrutiny The majority of medical prescriptions call for compounds absolutely lacking in specific or even general influence upon disease processes, and yet how rare is the physician who after examining the patient, and realizing that drugs can be but a false help, frankly gives his patient truly helpful advice, advice properly influencing his personal habits, which will, if followed, produce real cure Many physicians satisfy their patients' almost superstitious desire for medicine and their own knowledge that there is no drug to cure, by administering what is technically termed a placebo, a harmless inert substance which contents the sufferer until nature accomplishes that which the physician is unable to helpfully modify by pill or potion How seldom the physician takes his patient into his confidence and explains the modus operandi of such treatment. So the fetish of drug dependence, strong in the physician, lays an even heavier hold on the laity This would prove but comparative damage if all medicine were innocent placebos, but in his armamentarium, the physician has medicaments of a potency irresistible for good, but likewise fatal for damage, drugs which for the time will stay the trembling hand and whip the faltering nerves into activity, which will still the small voice of discomfort, rob weariness of its weakness and lull pain and anguish into drowse and dreams Weak and ignorant human nature clutches at these artificial comforts, little realizing or caring that too often the fire of disorder has but temporarily been checked with new fuel, to soon break out the fiercer How few physicians frankly and firmly show their patients the common relation between drug taking and character weakness? How often do they make clear to impatient sufferers that the help given by drugs is but fleeting and that too often dodging the corners of discomfort is the first step toward the death of will? How rarely is the physician's influence strong and wholesome in inspiring the patient with his superiority to circumstances How seldom does he quietly and hopefully explain the nature of the disorder and its rational, logical handling without habit-producing or will-wilting poison, and show him how he may by passing through a few hours of temporary discomfort learn that profound lesson of will and health which will be his future protection The contributions of medical weaklings to the great aggregate of damage caused by unwise drugging are mentioned with shame As a profession, doctors, in addition to harmful drug use, fail in their higher usefulness through a willingness to nurse and coddle unnecessary suffering, and through many popular, though questionable arts of superficial sympathy, not only maintain but produce invalidism So much of the waste of sickness of today grows out of self-indulgence that it is humiliating to see our men of medicine pampering the weaknesses underlying these human derelicts

"It is truly a serious charge to make against one's own profession, that in the practice of its art, it is aiding and abetting the very invalidism which looks to it alone for cure Could every doctor fill his patients with some measure of manly contempt for comfort, safety and ease, and inspire each of his ill ones with a larger and nobler conception of the blessing of transient suffering manfully faced, as compared with the misery of self-pity which comes when a human being surrenders all that stands for personal victory and self-mastery to a craven hour of ease, then would the days of much useless invalidism be numbered Meanwhile, the stronger, wiser and truer of the medical profession will be found working shoulder to shoulder with all teachers of wisdom in that noble and stimulating task of supplying wills for the will-less"—Robert S Carroll, M D, the *Scientific Monthly*, January, 1916, p 79

The Public and Mental Fads

In a public address given recently in Philadelphia (*Old Penn* Weekly Review, Dec. 18, 1915) Dr William Pepper, dean of the University of Pennsylvania, School of Medicine, thus calls attention to the manner in which the public are attracted by the various fads of drugless healing parading under high-sounding titles

"From the existing medical schools we may expect a constant improvement The only menace to medical education in this country lies in the fact that the American public seem to fairly welcome each and every new brand of drugless healing No matter how illiterate, how untrained in every branch of knowledge tending to enable them to diagnose disease, if these quacks but claim to be the exponents of a new cure our gullible public flock to their offices and often pay high for the folly If uneducated individuals are to be allowed to spend but a few weeks or months, or to take correspondence courses to acquire a sufficient knowledge of the latest variety of drugless healing to enable them to go forth and treat their fellowmen, while regular practitioners of medicine must have graduated from a four-year high school and then have spent one or two years in college and four years in a medical school, then danger is near, and medical education will still need reform"

Cancer Statistics in the United States

According to a recent bulletin issued by the United States Census Bureau a special report on deaths from cancer in the United States during 1914 is in preparation It will be prepared under a new plan of using the figures gathered by the census bureau The bureau has not undertaken special research work that will duplicate the work of any other institution or laboratories investigating cancer, but this report should result in a marked improvement in the mortality statistics in the way of greater accuracy and more detail On the suggestion of the American Society for the Control of Cancer, the figures in possession of the bureau will be more thoroughly analyzed and listed under more titles than those previously employed. The report will consist of tables showing deaths from cancer according to the site of the disease, age, sex, color, nativity and marital condition, covering the registration area, the several registration states and the usual subdivisions The publication of this report, it is believed, should bring out new and useful information as to the prevalence of the disease in the United States, and thereby contribute to a better understanding of its controllable features

Medicolegal

Jurisdiction and Review Where License Revoked

(Thompson vs State Board of Medical Examiners et al (Colo), 151 Pac R 436)

The Supreme Court of Colorado affirms a judgment dismissing a writ of certiorari bringing up the proceedings of the board revoking the petitioner's license to practice medicine because of the alleged procurement by him of a criminal abortion, according to findings of the board The court says that counsel for the petitioner asked the court to examine the evidence to determine whether the board had jurisdiction, contending that the only ground on which his license could have been revoked was that he had procured a criminal abortion, and that there being insufficient testimony to prove that fact, there was a lack of power to hear and determine But the board is by statute invested with power to revoke a physician's license for the act of which the petitioner was found guilty, and where a sworn complaint is filed with it charging such offense, that gives the board jurisdiction of the subject matter, and when the person against whom the charge is made appears in person and by attorney and contests the proceeding on its merits, that gives the board jurisdiction of the person Under the statute the duty rested on the board, after it had received the evidence as to the guilt or innocence of the petitioner in respect to the offense charged, to decide whether or not it was sufficient to convict It might be that the board erred in its decision on that question, but that was a matter which went exclusively to the merits of the case and did not bear in the slightest degree on the question of jurisdiction Where, therefore, as in this case, the record proper shows jurisdiction in the inferior tribunal, the authorities are practically unanimous that on certiorari the inquiry cannot be extended to a review on the merits, but that on every question except the one of power or jurisdiction the action of the inferior tribunal is final and conclusive Where the law does not require the inferior tribunal to preserve the evidence taken before it, on which it bases its action, such evidence does not become a part of the record to be certified up to the reviewing court on certiorari, and the findings of the tribunal based on such evidence cannot be reviewed Contention was made and argument indulged in to the effect that the board greatly abused its discretion in revoking the license Assuming for the purposes of this opinion, but not deciding, that this question was one which in a proper case might rightfully be urged, in the absence of the evidence which the board had before it the court was unable to see how that matter could be considered or intelligently discussed, much less determined There was no legal duty on the board to preserve the evidence offered at the hearing, and there was nothing in the record to indicate that the petitioner asked to have it preserved, or requested an opportunity to preserve it himself Under such circumstances he plainly was in no position to urge a reversal of the judgment of the court on the ground of abuse of discretion, as there was absolutely nothing here on which the court could predicate such action

Liability for Death of Hospital Patient Claiming to Have Drunk Mercuric Chlorid Solution

(Wilbur vs Emergency Hospital Association et al (Cal) 151 Pac R 155)

The District Court of Appeal of California, Second District, reverses a judgment obtained by the plaintiff, a widow, for the death of her son 18 years old, alleged to have occurred as a result of negligence on the part of the defendants while he was in the Emergency Hospital Association's hospital, to which he had been taken while suffering from an attack of pneumonia The court says that for about a week he had a special nurse When she took charge of him, she prepared a solution of mercuric chlorid, which was kept in a small glass on a chiffonier in the room, to be used for disinfecting the thermometer When the condition of the patient apparently justified dispensing with the special nurse, she left the glass containing the solution on the chiffonier That night the patient was restless, and about 2 a m was discovered getting back into bed, when he said that he had drunk "that green stuff" The chiffonier was so located as to require him to walk about seven feet from his bed to reach it The contention of the plaintiff was that her son's death was due to poisoning from drinking the mercuric chlorid solution, rather than to a recurrence of acute pneumonia due to a relapse It may be conceded that, considered as an abstract question of law, it was negligence to have the mercuric chlorid solution in the room where it could be reached by the patient The question, however, was Did such negligence contribute to or cause his death? Clearly, if he did not drink the solution, his death could not be attributed to such negligence, however gross it may have been The condition of the patient after the alleged taking of the solution was not accompanied by symptoms shown, without contradiction, by reputable physicians and nurses to manifest themselves in cases of such poisoning None of these, except the vomiting, manifested itself in this case, and that, as it clearly appeared, was due to the administering of whites of eggs as an antidote. Other symptoms exhibited, such as a high degree of temperature and greatly accelerated heart action, were conclusively shown to be inconsistent with the theory that the patient died as a result of taking a poisonous solution of mercuric chlorid The disappearance of the solution, assuming that it was of poisonous strength and quantity, was just as consistent with the theory that it was thrown out of the window as it was with a theory that the patient drank it, indeed more so, since had he drunk it the effect of so doing would have manifested itself in certain symptoms, none of which was exhibited

Marriage Not Annullable for Concealment of Belief of Taint of Hereditary Insanity

(Allen vs Allen (N J), 95 Atl R 363)

The Court of Chancery of New Jersey dismisses a bill filed by the complainant, who sought a decree annulling her marriage to the defendant on the ground that at the time of her marriage the defendant knew that he was afflicted with a taint of hereditary insanity, and with that knowledge stealthfully concealed the fact from the complainant The court says that at the time of the marriage the defendant was a graduate physician 31 years of age About two years thereafter he performed an abortion on his wife, without her knowledge This occasioned a confession by him that his determined avoidance of offspring was made necessary by reason of his having inherited insanity, and that he had concealed his affliction at the time of his marriage, knowing that his disclosure would have prevented the marriage About six years after his marriage he became violently insane and had thereafter remained in that condition The only evidence that the defendant's insanity was hereditary, aside from his own belief, was to be found in the opinion of a physician to that effect, which appeared to be based chiefly on the present symptoms of the defendant and the circumstance of insane collateral relatives The court holds that the relief here sought must be denied in any event for want of adequate proof of the fact that the defendant was at the time of his marriage afflicted with a taint of insanity which would have been inherited by his offspring The defendant's confession of his belief to that effect could not be properly accepted as sufficient to establish the fact, and the basis of the other physician's opinion in the matter was too uncertain The fact must be determined with reasonable certainty to justify a decree of that nature Moreover, the court thinks that it will be found that, in the absence of statutes specifically authorizing a decree of annulment, or declaring the marriage unlawful at the time it was contracted, no satisfactory authority exists to support the view that a marriage contract, voidable only, can be annulled by a court of equity for fraudulent concealment by a party touching his or her physical condition, except in the extreme instances of disease of either party of a nature to render contact seriously dangerous to the other, or pregnancy of the wife. The importance of healthful offspring cannot be overestimated, but that consideration appropriately belongs to the legislature

Society Proceedings

COMING MEETINGS

American Medico Psychological Association New Orleans, April 4-7
American Urological Association St Louis, April 17 19
California State Medical Society, Fresno, April 18 20
Georgia Medical Association Columbus, April 19 21
Louisiana State Medical Society New Orleans April 18 20
Missouri Valley Medical Society, St Joseph Mo, March 23 24
North Carolina State Medical Society, Durham, April 18
South Carolina Medical Association, Charleston, April 18 20
Tennessee State Medical Association, Knoxville April 4 6

ANNUAL CONGRESS OF MEDICAL EDUCATION, PUBLIC HEALTH AND MEDICAL LICENSURE

(Concluded from page 599)

FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

A Plan for the Regulation of the Practice of Medicine What the Federation of State Medical Boards of the United States Could Accomplish

Dr. O V Huffman, Brooklyn The federation could help to bring about uniformity in the methods, standards and requirements of all state medical boards The much desired reciprocity between the various states in endorsing each other s medical licenses would naturally follow such uniformity

Each state board is urged to accept and bring about the necessary changes so as to permit them to grant licenses to graduates of acceptable medical colleges without examination The federation could prescribe the requirements which would have to be met by a medical college to be acceptable, two years of study in a college of liberal arts for admission, and a satisfactory four year medical course It was suggested that the federation ask the United States Bureau of Education to provide the experts and inspectors necessary for publishing a list of acceptable medical colleges

It is suggested also that state boards provide examinations for all applicants who have not been educated in the prescribed way Other suggestions are that state boards revoke a license whenever the holder has been proved morally or professionally unfit to practice — such revocation to be accepted by all state boards, and that the boards put a stop to all incentive to quackery by getting the medical profession remunerated on such a basis that it would be to its direct interest to keep its clientele in sound health To do this a scheme for a compulsory sickness insurance was suggested It was stated that the public could not be safeguarded against incompetent practitioners until the practice of medicine was put on a sounder economic basis Any scheme for compulsory insurance which provides adequate compensation to the medical profession and at the same time relieves wage earners of the great burden of doctors' bills ought to be welcomed by all concerned If each of the 30 000,000 wage earners paid $2 11 a year, we should have a sum equal to the present aggregate income of the whole medical profession, and in addition the profession could still have the fees collected from patients with incomes of $1,200 or over In general, the public does not realize how miserably underpaid the medical profession is It does not seem to be known that doctors generally are not paid for their services given in dispensaries or in hospital wards

Heretofore, whenever the economic situation of the medical profession has been discussed, it has usually been stated that there are too many doctors Investigation shows that in general the medical profession is not overcrowded, and that a physician cannot properly care for more than an average of sixteen patients in eight work hours Statistics compiled by the Industrial Relations Committee show that 2 5 per cent. of the population is constantly sick or disabled, which makes an average of nineteen patients per day for each doctor

Regulation of Drugless Practitioners

Dr George H Matson, Secretary of the Ohio State Medical Board, Columbus, Ohio Laws to regulate the practice of medicine are largely matters of education Advancement in existing medical practice laws should be anticipated the same as we anticipate progress in other educational laws There should be no place for special privileges The right to treat human ailments should be given only to those who by an educational test have been proved to be properly qualified The best method of meeting present conditions is to provide for the regulation of all who in any way practice the healing art Having begun with the restrictive plan which has led to multiple standards, we should now provide not only for present but also for future practices The Ohio State Medical Board obtained advance information last year that two or more bills were in preparation for introduction which would, if enacted, establish other standards for medical practice in Ohio To preserve the integrity of our own medical practice act, further legislation was obtained authorizing the state medical board also to examine and register all persons desiring to practice a limited branch or branches of medicine or surgery, and to establish rules and regulations governing such limited practice Holders of limited practitioners' certificates are prohibited from treating infectious, contagious and venereal diseases, from subscribing or administering drugs or performing major surgery Certificates must be recorded with the probate court the same as those of physicians and surgeons, and may be revoked for the same reasons, and also for violations of the rules and regulations established by the board governing the practice The definition of the practice of medicine is unchanged, and the penalty for violation remains the same and the fee for examination the same Reciprocity is provided for We are not prepared in Ohio to state definitely whether our recent enactment will prove a success or failure Since the limited practitioners have agreed to the educational program adopted, we cannot believe that we shall suffer as much during the next ten years as we have during the past ten The public will not reap any benefits until all these applicants for license are required to demonstrate their ability to diagnose diseases, which is now essential.

Standardization of Hospitals

Dr John M Baldy, President of the Pennsylvania Bureau of Medical Education and Licensure, Philadelphia The necessity for the standardization of hospitals has arisen from the demand of the profession for the intern year If the medical student should have an intern year, it follows, as a matter of course, that hospitals must be taken in hand as well as medical schools so that the time of the intern will not be wasted This year of time should be of value to him and of ultimate value to the community There are certain hospitals that have anticipated the needs of the time and are perfecting their plants, but they are few and far between The hospitals are governed by boards of managers, they have superintendents in charge, many of them trained nurses, we have not pointed out to the boards of managers wherein these institutions are deficient We have not pointed out to them that certain things are absolutely essential for the successful management and running of these institutions Boards of managers are business men and have not received very kindly the suggestions from doctors, the progressive men on hospital staffs, on account perhaps of lack of funds The advice and suggestions of such men would enable them to bring up the efficiency of the various departments in these hospitals and see that they are manned by competent men If the intern year is to be one worth while, then hospitals should be standardized with reference to equipment and facilities for making the intern year worth while

Discussion on the National Board of Medical Examiners

Dr C E Cantrell, Greenville, Texas The protection of the people of a state is laid at the door of the governor This is true of most, if not all, states The governor appoints the board His office is a political one It is the duty of the board to prevent men from entering on the practice of medicine who have not been properly educated and who are not qualified Where is the difference between the examination that will be given by this national board of examiners and its staff and an examination of any first class university medical college? Why give them a better certificate than the Johns Hopkins? It seems to me that great danger lies in multiplicity of standards

Dr Arthur M Hume, Owosso, Mich Every member of a state board should think as to what he considers his duty As a representative of the Michigan state board, my primary duty to the people of the state of Michigan is so to aid in administering medical affairs in the state that all of the people will receive the most effective service from the medical profession in that state According to the opinion of the attorney-general of Michigan, we cannot as members of the state board recognize the certificates of a national board

Dr T J Crowe, Dallas, Texas On such a national board, let us have three federal men, and twelve representatives from the Federation of State Medical Examining Boards of the United States Let us call it a federal board, so that we know what we are getting It seems to me, starting with six men picked from the federal service, and only three men from the state boards is a mistake There should be a larger representation from the Federation of State Medical Examining Boards of the United States

Dr E J McKnight, Hartford, Conn It is a good thing to have a national medical examining board I have no criticism to make of its personnel If the Council on Medical Education should report favorably on this national board at the next session of the American Medical Association, I shall vote for it

Dr S L Jepson, Wheeling, W Va The national board has placed the standard too high The examinations held by the different public services are much more rigid than those held by state boards When this high standard is announced through the medical journals it will lead to the failure of this national board

Dr H W Abraham, Appleton, Wis The state board of Wisconsin has the greatest confidence in this movement for a national board When the matter was published in The Journal of the American Medical Association, and the board was named and a resume of the standards exacted, our board as a unit voted to accept the licentiates of this board if in every way they came up to the standard required in Wisconsin

Dr James W Holland, Philadelphia The argument in favor of a national board from the standpoint of the army and navy and Public Health Service was not simply to make it an adjuvant to the recruiting departments of the army and navy It is very likely we are about to enter on a system of preparation for war which will necessarily include a large body of trained medical men who, by the most varied and searching tests, are known to be qualified to take care of our young men before and after they have been on the firing line They are to be in the reserve corps, and it is not simply those in the standing army, which is relatively small, but in that army which we may be called on to summon at any time and which may require thousands of men

Dr W T Gott, Crawfordsville, Ind The weakest spot in our system of legislative enactments is the lack of uniformity, but this is the first time to my knowledge that a proposition has been made to give legislative functions to a voluntary board If that doctrine were applied to other matters in which there is a lack of uniformity in state legislative matters, we would have voluntary boards instead of legislatures and congresses While such a body composed of distinguished educators would perhaps be better than anything we now have, it is contrary to the spirit of our government

Charles William Dabney, President of the University of Cincinnati I am glad that this national board is voluntary since it is not legal Even though a single state may not accept its certificates, I hope this board will go ahead and give us a standard of medical education such as is established by the Johns Hopkins The people of this country need it

Dr H H Grant, Louisville, Ky The object of this national board is to give every ambitious young man the advantage and opportunity to get the approval of the highest tribunal that can be established It gives those who hold certificates from this board prestige everywhere in the United States

Dr Walter L Bierring, Des Moines, Iowa There has been criticism with reference to the manner in which this board is constituted, nevertheless its purpose is in keeping with what the Federation of State Medical Boards has been discussing and working for since it was organized I presume that the real purpose of this board will be to standardize examinations These standards may be a little too high, but they will, at least, establish a standard for examining licentiates to which all states can approximate It would appear that this is a pioneer movement to which we should all subscribe

Dr Alexander Marcy, Jr, Riverton, N J New Jersey is heartily in sympathy with this movement for a national board We believe it is a step in the right direction I am glad indeed to give my unqualified approval to this movement, to the personnel of the board, and to what it hopes to do

Dr J M Howell, Dayton, Ohio I will use what influence I can in favor of this national board

Dr Isadore Dyer, New Orleans The board has submitted its case to representatives of all sections of the United States and to men who stand for all phases of medical education and state medicine The members of the board in coming before this aggregation of intelligent men do not wish them to misunderstand their motives in presenting this case The board has been organized for the specific purpose of submitting and putting through a standard of medical education The plan which they have submitted has been devised by a comparatively small group of men who have acted with their best intelligence

The discussion tonight has been of the sort which was to be expected No movement which stands for progress can succeed without reasonable objection If this body tonight had had no discussion and had unanimously endorsed the board, I believe some of us would have felt the board was not nearly so strong either in its motives or methods as we had hoped it might be The opposition to it speaks for its strength There is no member of the board who does not welcome honest criticism and honest suggestions with a view to improving its motives and its methods If it is possible to put the board on a legal basis, it will be done. It is the intention of the board to solicit the best advice it can get to that end If it is not possible to place it on a legal status, I believe I speak for the board when I say that it is the intention to go ahead on the standard which it proposes until it wins its way by the right and justice of its function

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JOINT SESSION OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION AND THE FEDERATION OF STATE MEDICAL BOARDS

Medical Practice Acts

Dr Henry B Favill, Chicago We come today to the discussion of the practical decision on two very important topics, one the formulation of medical practice acts, a subject hitherto characterized by disharmony, lack of symmetry and lack of consistency Today we are reasonably free from the reservations which we might have had with reference to our previous utterances, and we are more nearly at the point of being able to give definite advice and guidance with regard to medical practice acts than ever before

The Council on Health and Public Instruction has been conducting for a year a very careful scrutiny, study and survey of boards of health of the various states, with the results that we are able to produce today not a perfect, but a very comprehensive survey of the whole status of health board subjects of this country

It is uphill work for the medical profession to project its view on the general public. The reasons for this are many, but the fact remains that the heaviest load we have to carry, sooner or later, is in enlisting interest of the public in its own business and for its own welfare. It is rather an unusual experience for this Association to find a strong cooperation on part of the public or representatives of the public (nonmedical public) in the effort which it is attempting to put forth strictly and solely for the benefit of the public.

When Ex-Governor Hodges was governor of Kansas, I think I am not exaggerating when I say he was the first governor who ever distinctly saw the point and assumed responsibility for the medical legislation of his state. He was the first governor that I know who ever attached sufficient importance to the subject to appoint a commission to study carefully the question of medical practice acts and report to the administration. His commission reported a bill which they endeavored to have enacted. The bill in the form in which it was drawn did not pass the Kansas legislature, but this in no sense detracts from the efforts of Governor Hodges. While that legislation in Kansas was pending, Tennessee came to the front with an effort to pass a medical practice act, applied to this Council for advice on the subject, was given the information as coming from Kansas, and while Kansas was considering and finally rejecting their model bill, as the result of a very remarkable campaign Tennessee went ahead and passed practically the same bill.

The Provisions of a Model Medical Practice Act

Ex-Governor Hodges, Olathe, Kansas: My experience as a member of the legislature and as governor has demonstrated to me that the laws on the practice of medicine are a jumble of contradictions and confusions and are the products of minds scantily conversant with the fundamentals of a recognized science that differentiates between scientific investigation and primitive belief in witchcraft. Believing that there should be but one educational standard for all who may treat the sick, a commission of three physicians and two laymen was appointed in Kansas to investigate this subject and draft a bill providing for a single educational standard for all persons desiring to treat the sick for compensation. The fact that certain cults and sects do not use drugs does not change the fact that they are practicing medicine, so long as they undertake to diagnose and treat human diseases and injuries. The man who assumes to have knowledge fitting him to treat human diseases should be required by the state to comply with definite educational conditions for the protection of the public. The state in appointing a board of examiners assumes an obligation for the protection of the health of its citizens and should see to it that the licenses which it issues to all men have a uniform value. There is no justice or consistency in the state requiring a physician to prepare himself by years of study and to prove his worth by passing a rigid examination and then admitting others to the same privilege after only a few weeks of preparation. The commonwealth should not allow doctors of one school to practice on any easier acquirements than those of another school. The patient has a right to be attended by a physician of his own selection and the state should not be a party to any differences of opinion between opposing schools nor impose any unjust regulations on any school, but it should require the same degree of educational preparation of all applicants. The people should safeguard these conditions for their own protection. The easiest way to do this is to require of all persons who desire to treat the sick for compensation, a preliminary education including a high school course at least, and such medical training as will give each practitioner a knowledge of the structure of the body and its afflictions. Regulatory laws should not be designed to protect any particular group or school.

One Year's Experience with the New Tennessee Law for a Board of Preliminary Examination

Mr. Irby R. Hudson, Nashville, Tenn.: At the last meeting of the legislature, a law was enacted creating a board of preliminary examination. The medical practice acts of Tennessee permitted practically any one to appear before the examining boards and take the examinations. So far as I can learn, no one was excluded from the examinations because of a lack of education and equipment. Many students of our medical colleges during their sophomore and junior years have appeared before these boards and have satisfactorily passed the examinations.

The bill provides for a more or less new phase of medical legislation. The real purpose of the bill is for the protection of the state against untrained men. The members of the board of preliminary examination are not trained experts in the medical field, none of them have even so much as attended any medical school, but they are school men of academic training who are employed in daily considering school problems. We do not pass on the exact medical knowledge of the student. We are to investigate whether the candidate has had sufficient training in reputable schools to warrant us in allowing him to practice.

Many of the states have laws already which require higher educational standards, but in Tennessee we cannot raise our standards higher for the reason that our best medical schools until two years ago did not require for entrance more than the four years of the high school work. But now that our colleges have raised their standards, our law can raise its standards. The leading schools now require one year of premedical work for admission, and our law makes the same requirement after 1919.

Our law can easily be amended for higher educational requirements as our local institutions set higher standards for the state. We are taking the medical department of the state university, as it is now organized, for our 1919 standard. This institution is ranked as an A college by the Council on Medical Education.

Our law provides no definite compensation except a fee of $5 an applicant, and this in many cases was to be refunded. As it worked out this first year, we have had about 100 men apply to us. At $5 an applicant, we should have only $500 to pay all of our expenses. With this amount you can readily see how much investigating could be done, which virtually meant none outside of our state.

SYMPOSIUM ON WHAT SHOULD BE THE PROVISIONS OF A MODEL MEDICAL PRACTICE ACT?

Important Features of a Model Medical Practice Act

Dr. Horace D. Arnold, Boston: A great deal depends on our interpretation of the word "model" in this connection. It should not, I believe, be interpreted to mean "ideal," but rather to indicate a "pattern" which is practicable for general application at the present time. Such an act, which is capable of general adoption, would be a longer step toward uniformity than would a more ideal measure which few states could adopt. We should aim to put this act on as high a plane as is practicable at the present time, but not to get too far in advance of a standard which may be adopted by a majority of the states. Some states are already in advance of such a model practice act as I advocate. We should not ask them to go backward, but rather encourage them to maintain their high standards, so as to encourage other states to come up to their level.

One of the most important features of a model practice act should be a definition of the practice of medicine, broad enough to include all forms of treatment of the human body, in health as well as in sickness or injury, by any method whatever. In this respect the model act, submitted for discussion a year ago, is deficient. All who wish to act under this definition should be licensed by some proper state authority and all others should be prohibited from acting in such capacity, with penalties for the violation of this law.

We must somehow divide these various practitioners into classes according to the education and training that may properly be expected from them, for any regulation must have an educational basis. The first broad subdivision should come between those who may be expected to make a diagnosis, and those who ordinarily would not do so. Among the latter are midwives, nurses, masseurs, chiropodists, optometrists and those employed in hydrotherapeutic establishments

The central board of registration might well consist of seven members, as suggested last year, but I think they should all come from the class of licensed practitioners who are recognized as qualified to diagnose disease

For all forms of practice which require a diagnosis there should be a uniform minimum educational requirement, whatever form of practice the licensee is to follow Owing to the fact that all forms of so-called drugless therapy should be included, I do not think it desirable to have the requirements and examinations uniform throughout, with the exception of therapeutics, as is sometimes advocated

What should be the minimum uniform requirements? They should include first a standard four year high school course, or its equivalent The minimum professional education should be at least three years spent in a school approved by the central medical board, with evidence of satisfactory work in human anatomy, physiology, chemistry, pathology, bacteriology, symptomatology, diagnosis of disease (medical and surgical), hygiene, sanitation and preventive medicine, including the recognition of contagious diseases A fourth year should be required, devoted to therapeutics and clinical experience in the special form of treatment for which the license is to be granted, under such instruction or supervision as is acceptable to the central medical board

The premedical requirements should include, in addition to the four year high school, one, or preferably two, years of college work including courses in physics, chemistry, biology and a modern language The act should specifically state the amount of time to be spent in each of these subjects, as in the requirements of the Council on Medical Education

A Model Practice Act

Dr. Walter L Bierring, Des Moines, Iowa A national medical registration act is not possible in this country without an amendment of the federal constitution, and in seeking another solution it is found in the adoption by the various states of a uniform practice act, based on an equalization of standards, which will make reciprocal endorsement between each of the several states a reality

In Canada this matter has culminated in the creation of the Medical Council of the Dominion of Canada, which constitutes a central examining board, and thus tends to more uniform medical requirements in the several provinces of the Dominion Similar good results in standardization are to be expected from the proposed national board of examiners During the past twenty-five years the Conference of Commissioners of Uniform State Laws has been engaged in preparing uniform laws on the more pressing subjects to present them to the legislatures of the various states for enactment, which illustrates that in other matters besides medical practice acts there is still a lack of uniformity in state regulation

While recognizing the lack of uniformity in standards that prevail, when statistical data are collected and compared with conditions a decade ago, a very marked improvement is everywhere noticeable At that time a preliminary education of four years high school or higher was required in only ten states, while now provision exists in thirty-seven states, and similar changes have come in other directions For these better conditions the Federation of State Medical Boards of the United States is deserving of some of the credit

A model practice act should define clearly the preliminary education, the fundamental medical training, the character of the licensure examination, and besides should contain a clear and definite statement of the method of procedure for the revocation of the license issued A license to practice should be held by the recipient only during good behavior

Basic Provisions of Model Medical Practice Acts

Dr. W J Means, Columbus, Ohio The first fundamental provision that should be written into every medical law should be based on educational accomplishments, both cultural and professional, and the standard should be uniform for all persons who desire to practice medicine There is no place in a true educational standard for special privileges A standardized educational test for practitioners does not interfere in any way with the right of the individual to choose his own medical adviser, but does guarantee, so far as the matter can be determined, that he will not be imposed on It is certainly the prerogative and the duty of the state to prescribe educational requirements for those who are asking the privilege to practice medicine on its citizens I believe that, fundamentally, this is the most important provision which should go into every medical practice act

Speaking of special privileges, there is no good reason why an individual who wishes to practice osteopathy, homeopathy, eclecticism, chiropractic or any other practice should object to being educated to the same degree as the one who wishes to practice regular medicine Unfortunately, legislators are impressed with the argument that drugless healers, the osteopaths, and all others who lay claim to some peculiar way of curing disease, have a perfect right to do so as long as the people want them This has led to the exemptions and special privileges in our medical laws

The next important step is uniformity in the medical laws in all the states of the Union This perhaps cannot be reached until the national government enacts a medical practice act In the absence, however, of a national law standardizing the practice of medicine, we must continue to deal with state regulations and through education of the public bring about the desired reforms An effective law is one that expresses the sentiment and conscience of the people.

An educational test is one of the basic provisions that should be written into every medical practice act, and it should apply to all applicants, regardless of sect, cult or creed There should be only one administrative board, the members of which should be selected from representatives of higher education Applicants should be required to take an examination in all the fundamental subjects of medicine, and to pass each with a creditable grade, failing to do so, they should not be permitted to be reexamined until they have pursued and completed a course in an acceptable medical college There should not be incorporated exemptions or privileges that may tend in any way to lower the minimum educational standard enacted in the law or fixed by the medical board

Discussion of Symposium on What Should Be the Provision of a Model Medical Practice Act?

Dr John K Scudder, Cincinnati I cannot see the necessity or philosophy of having the board made up of four non medical men, ex officio I fail to see why the president of the state agricultural college should have anything to do with the licensure of physicians I feel the same way in regard to the president of the state normal school, and medical boards do not recognize attendance in normal schools as being related to academic subjects

As to the standard of entrance qualifications, it should be specifically stated in the law, and not be in the power of the board to make it either too low or too high, but it should be put in the law specifically as the present average standard, and then as necessity calls for it, it should be raised

Mr Thomas S Hogan, *Attorney for Illinois State Board of Health*, Chicago I believe there should be a uniform practice act It should be clear and without equivocation, and it should be thoroughly understood by courts and by juries, and the same law should exist in all of the states of the United States No matter how good the law may be that you have devised, unless all its provisions are strictly enforced, it is of no avail In Illinois there are many violations of the law For the entire state of Illinois the sum of $1,500 a year is allowed for the prosecution of all violations under the present medical practice act It is up to the members of the medical profession and the associations connected with the medical profession to impress on the legislators that this law is an outrage on the statute books, that it is against the interest of the profession and the people, and no matter how good your model medical practice act may be, unless you can enforce it properly in the courts and make it as clear as it can be made, it will be of no avail

Dr. C. E Cantrell, Greenville, Texas It must be perfectly apparent to all present that we cannot enforce these laws unless we have the constabulary behind us Notwithstanding the fact that the law may lie for months and years on the statute books, unless the district attorney and other proper authorities of the state take it up and enforce it, there will be gross violations, and finally there will be objection made to this or that section, and the matter will have to be submitted to district attorneys to consider and to enforce the law We find it so in Texas, and we were among the first to have a law that was made to include all of the schools of medicine on our board We ought to recognize in the eclectics, in the homeopaths, and in all of the so called sects important factors in educating the people I am a defender of the state boards because they gave us our first relief from quackery

Dr. John A Witherspoon, Nashville, Tenn We should try to educate the people that medical practice acts are not to protect the medical profession because they spring from the medical profession, but to protect the people That is the object primarily of all medical legislation

Dr S L. Jepson, Wheeling, W Va In West Virginia we are fortunate in having a physician for governor In the last legislature we had ten physicians, and we had as chairmen of committees on sanitation and medicine two very high-minded, well educated doctors who were intensely interested in the passage of a bill which we considered greatly in advance of any other that had ever been on our statute books The bill was prepared by officers of the United States Public Health Service, which created a new department of health, with a state health commissioner as its executive official, and which gives to us a council on health composed of seven men, the commissioner being ex officio a member, the right to pass regulations, and the right to legislate for the betterment of the people

As to the enforcement of the statutes against irregular practitioners or unlicensed practitioners, the greatest difficulty we have found is in having grand juries indict these men

Dr. B D Harison, Detroit In our state, practicing medicine without a license is a criminal offense, and the prosecuting attorneys of the several counties are charged with the duty of enforcing the act In Michigan we are very fortunate in having a governor who, in his message before the legislature, stated without equivocation that he would enforce the medical practice act, that he was entirely opposed to quackery, and he would use all the influence of his office, and that of the legislature against everybody who pretended to be able to cure or treat disease without being properly qualified to do so He has carried that to the extreme. In the case of a prosecuting attorney who refuses to take notice of a complaint, the governor writes him for an explanation, and if he does not give a proper reason he is dismissed from office. This has had a tremendous influence for good in our state.

Dr. D C. Budge, Logan, Utah It is absolutely essential that the public be educated We have a single board in Utah made up of regulars, homeopaths, eclectics and osteopaths We are working in harmony I have not heard anything in this conference that would induce me to change my mind in that regard We are working for a certain standard of education and not for sects

Dr. T J Crowe, Dallas, Texas We have a mixed board in Texas, and have been harmonious in our work. Doctors themselves are to blame for not getting more out of their medical examining boards than they do get at present. Doctors organize individually themselves, but are only indifferently supporting the work of the board Our board has worked together as a unit for the advancement of medical education and the uplift of the medical profession generally

Dr L. E. Siemon, Cleveland Any model medical practice act to meet the approval of the general medical profession, on whom the practical enforcement of that act depends, must provide for protecting the individual medical public as well as the general public In my judgment a mixed board has solved the problem as far as Ohio is concerned No one can say that at any time have the so-called irregular elements of that board failed to measure up to the demands of the situation and to march forward in the van of progress, and any model medical practice act to receive general approval throughout the country must provide for some form of recognition of the various elements in medicine that they are supposed to license

TWELFTH ANNUAL CONFERENCE OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION OF THE AMERICAN MEDICAL ASSOCIATION

Held in Chicago Feb 8, 1916

Dr. Henry B Favill, Chicago, in the Chair

Dr Charles V Chapin, Providence, R I, read a paper entitled "State Public Health Organization," which will be published in The Journal

Dr John W Kerr, Assistant Surgeon-General, United States Public Health Service, followed with a paper entitled 'Some Essentials of Public Health Organization," which will be published in The Journal

Discussion on Public Health Organization

Dr Henry M Bracken, St Paul The question of appointment of the executive officer was discussed and the point was made that such appointments are not desirable, that one of the important functions of a council or board of health should be the appointment of an administrative officer, and this I think, is true if we are to secure tenure of office referred to by Dr Kerr I think it is generally conceded that we cannot carry on efficient health work without the authority of the board or council to make regulations, and it is recognized that these regulations come under police control, and it is possible for legislatures really to transfer the power of legislating to such a body as this One can readily understand that unless this is possible, progress in public health work is to be greatly interfered with because no legislature will formulate laws that will make it possible to administer health work as councils or boards that are more or less familiar with this kind of work

It is hard to make the average layman and the legislator understand that vital statistics are anything more than collecting the returns of births and deaths and possibly of marriages and filing them away They do not seem to appreciate that these things are necessarily the basis of our work Even doctors themselves do not appreciate the importance of accurate vital statistics The division of public health work sometimes is simply alarming Why tuberculosis should be set off by itself as a health problem is more than any health official can understand

The point was made whether there should be the appointment of local health officers That is a dangerous proposition creating a political machine Let the local people appoint their officers, but if you can arrange that the state can discharge them for cause, then the locality will have to put up other men If they know you are going to discharge a man who is not efficient, they will be more careful in their appointments

Dr. John N Hurty, Indianapolis There is such a thing as Nature, and then there is another such thing as human nature It is with human nature that we have principally to deal in this work Human nature is moved principally by self-interest, which is decidedly different from selfishness If you wish to convince a man you must appeal to his self-interest Only about 10 per cent. of people can think, 20 per cent are able to think what others think, and 70 per cent. cannot think at all Education is a great force in uplifting mankind, but you cannot educate brains that are not educable—brains that have nothing in them to educate, and that fact must be considered The great mass of people must be forced and compelled to do that which is necessary for their own salvation

A great deal is to be said for a commissioner of health at the head of a department of health A commissioner of health of the state is certainly good

In regard to the medical inspection of schoolchildren, I would rather have that term changed and say "health supervision" I am not convinced yet that the health supervision of schoolchildren should be under the public health department It is a matter of education

I believe in the county unit for the all time health officer, especially for our state This is because the county is already the organized legal constitutional unit It has certain powers given it by the constitution, powers of taxation, but if they select an all time officer they should be given that power, with the power residing in the central authority to discharge for certain well defined reasons or causes If they do that they should be compelled to select from an eligible list furnished by the central authority We have that draft in the law and expect the legislature to pass it

There is a great deal of argument made for health officers who are not medical men They do not have to make diagnoses, they take the word of the practicing physician for that Our health officers never go behind the returns of the physician except in the most dire conditions, otherwise it would not do

Dr Wickliffe Rose, Director of the Rockefeller International Health Commission, New York The public health business of a commonwealth is one business, and not many, and if it is one business in the interest of economy and efficiency that business should be brought under one administration and not many If I am not very much mistaken, we are facing what promises to be a public calamity, in that there is now a tendency in many, if not all our states, to parcel out the business of public health to a multiplicity of state agencies, and in addition to that to permit a great multiplicity of voluntary agencies to come into the state, and without supervision by the state department of health, undertake to run some portion of the state health business We are beginning to see an influence in public health, and for that reason there is no more important thing than that this body should proceed to action and continue to act until this business, than which there is no more important for the commonwealth, shall be conceived by the people as one business and brought under one administration Whatever belongs to health should come under the administration of the commonwealth for the public health

In the second place, if this is a business, it is very essential that that business be properly financed If you are going to enter on any great business undertaking that should extend not through one year, but many years and further into the future than you and I can see, I do not think you would engage in that enterprise by undertaking to supply funds for it in a haphazard way You would not undertake to finance it Financing is a business of itself There is such a thing as financing the public health in a scientific way, and, it seems to me, you should appoint a committee to take up the business of financing public health, and let that committee, after mature thought and deliberation, bring back a report to this organization for consideration and, if necessary, devote a whole afternoon to a discussion of the proper financing of public health organization Your funds must be adequate and derived from the proper sources

One of the functions a state board has to perform is that of making rules The rule making power by the state board is a function that is extremely important, and if the board should have no other function it should be organized for that purpose It is a function which cannot be adequately performed by the health officer unsupported by the board The second function is the appointment of a state health officer So long as that man is appointed by the governor or elected by the people, you will not have efficient service When the board comes to appoint an executive officer, it needs to have the power to select that officer from the country at large It needs to have the power to fix his compensation and to modify it from time to time in accordance with efficiency of service It needs to have power to keep him at his post as long as he is effective You would not undertake to administer a big business on any other basis than that Having selected that man, then the board wants to clothe him with authority and hold him responsible for results

From experience I am convinced that our public health work is going to become really effective only so far as we can enlist a sympathetic and active cooperation of the masses of the people Public health work is essentially an educational proposition, and its efficiency is going to be measured largely by the efficiency of the machine as an educational machine

Dr Cressy L. Wilbur, Special Agent, United States Bureau of the Census, New York In the paper of Dr Chapin, considerable stress was laid on the fundamental importance of the registration of births and deaths as a basis of public health work We have been urging the point that vital statistics is absolutely the necessary basis of public health work for years and years, and this Council has devised a model law in connection with the American Public Health Association and the Bureau of the Census, which is designed to secure such results under the law as will compel the registration of births and deaths If the model law is enforced with the penalty attached in every case of violation, I believe we will soon have complete registration of births and deaths

Dr Henry B Hemenway, Evanston, Ill I can see no possible advantage in appointing a board as compared with one man at the head of the department who will be absolutely responsible to the state for the health of the state, or responsible to the community for the health of that community He may have and should have under him, if the department is large enough, a council, but in that council he may have the advantage of experts who are devoting their whole time to the work, not men who are devoting a few days in the year to it, without paying perhaps much attention between times, but men who are devoting their whole time to the one thing—men who are best qualified, each man to speak for his own particular branch of the work, in that way the different ideas may be harmonized In public health experience in all executive work, if you have a board for any purpose, there is some one man who is better qualified than all the rest of the members of the board in that particular line of work If that is so, then every man who is not thus qualified is so much of a hindrance, he has got to be persuaded and shown that things are thus and so I am emphatically opposed to the board idea

With reference to education, attention has been given to the education of officers of health, of commissioners of health in the line of doctors of public health, but I know of no provision in any educational institution in the United States for the education of dairy inspectors or other local inspectors, and it is just as necessary to provide for the special education of these lower employees as it is for the chief officers

Dr Albert W Hinman, Dundee, Ill There is not a food on the face of the earth as a food product today that contains as much filth as milk when you take it as a whole, and considering that it is produced promiscuously all over the country We find a man here and there who is scrupulously and religiously neat enough and clean enough about his business to feel that he must furnish a clean product, but the most of them are careless, and hence the milk is more liable to become contaminated with disease-producing germs As I view the matter, we will never get that food product produced and handled as it should be until there is a law which compels these men to furnish milk under more cleanly and hygienic conditions

Dr Charles V Chapin, Providence, R I I was particularly pleased with one thing that Dr Rose said about the desirability of having all public health work under one government department That has not been so in the past It has been scattered among different departments, and outside agencies have come in It is our own fault State health officers and municipal health officers, of which I am one, have been negligent We have not done our duty, and others have been obliged to come in and stir us up Let us take warning from the past and do everything that devolves on us to promote public health so that it will not be necessary for outside agencies to come in

Dr John W Kerr, Washington, D C I wish to urge on the conference that rather than attempt at this time a comprehensive model law, we attempt the adoption of as many principles as we can. Let us in this matter take two bites of the cherry, and above all, I would emphasize again the providing of money and of men. Those are the sinews of war, and without them any legislation you get would be sure to fail.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Jan. 26, 1916

The President, Dr. John D. McLean, in the Chair

SYMPOSIUM ON PNEUMONIA DURING 1915 AND 1916

Diagnosis, Complications and Treatment of Pneumonia in Children

Dr. H. Brooker Mills. In diagnosing bronchopneumonia, three important points for consideration are the age of the patient, history of previous illness and the existing bronchitis. Three other symptoms nearly always present are increased pulse and respiration rate, and fever. Dilatation of the alae nasi and the presence of definitely localized mucous rales also facilitate diagnosis. The physical signs, which are many and varied, develop early. The most common complication of bronchopneumonia is otitis media. The prognosis is always grave, and the mortality is estimated by some at 50 per cent. The treatment is largely symptomatic, with special attention to preservation of strength and upbuilding of vitality. A room temperature of 65 F., with plenty of fresh and frequently changed air in the room, a maximum amount of nourishing liquid diet, daily colonic irrigation, daily bath and plenty of water to drink are indispensable in treatment. Counterirritation is valuable, and frequent and thorough cleansing of the nose and throat is absolutely necessary. For the cough, inhalations are preferable to expectorant mixtures. For the high temperature, I use hydrotherapy exclusively. In addition to the usual hydrotherapeutic measures, I have found of advantage the wrapping of the hands and arms to the elbows, and the feet and legs to the knees in wet cloths covered with a dry cloth, for twenty minutes, three or four times a day. My patients are never disturbed after 7 p. m., but in the event of their waking, advantage is taken to meet the indications. The natural stimulation from nourishing, well digested food, is far superior to the artificial stimulation frequently employed too early in the disease. When, however, the heart needs assistance, this should be given. I have been fortunate in having my hospital patients on a well lighted, protected porch adjoining the ward. I have made little use of the bacterin treatment. Lobar pneumonia in children is ushered in by high temperature oftener than any other disease of childhood, except scarlet fever. The onset is sudden, with high temperature, rapid respiration, vomiting, prostration and abdominal pain. For the first twenty-four hours, pulmonary symptoms and physical signs in the chest are absent, the chill, usually present in the adult, is rare in children, rigor seeming to take its place. There is practically no cough or expectoration during the first few days. Empyema is a frequent complication, and there is no relation between the amount of fluid present and lung involved. In the present epidemic of pneumonia in Philadelphia, many cases of lobar pneumonia have been observed in children below the age when expected, and these have occurred in debilitated children rather than in the robust child, as is usual. There has also been an increased tendency in bronchopneumonia toward coalescence of diseased areas, and the fever has been sustained rather than of the usual irregular and moderate type. In several cases an unusual fact has been the enormous excursions of temperature between the hours of 7 p. m. and 7 a. m. I cannot offer any satisfactory explanation of these various peculiarities of the present epidemic, possibly the virulence of the epidemic itself may be a factor in their production.

Diagnosis and Treatment of Pneumonia

Dr. Hobart Amory Hare. Consolidation of any part of the lung, whether it be due to the pneumococcus, the tubercle bacillus, or other cause, is in one sense pneumonia. Although from the etiologic standpoint all cases of pneumonia is identical, from the clinical aspect one case is as often different from another as smallpox is from chickenpox. In all cases of true lobar pneumonia, the patient is suffering from an acute, infectious disease quite as specific as scarlet or typhoid fever. In the absence of a specific antitoxin we must not treat the disease or the patient with drugs, except when definite assistance is demanded. In both bronchial and lobar pneumonia, absence of positive physical signs as a group often misleads in diagnosis. Fine rales or bronchial breathing are often apparently absent, because of the great amount of exudate present. In such cases percussion will often reveal dulness over a silent area, but even percussion may be misleading because a deep-seated consolidation may give hyperresonance on light percussion over the area affected. The differentiation of effusion and pneumonia is easy in typical cases and still easier in the textbooks, but is often one of the most difficult problems in practice. Croupous pneumonia may assault a man frankly, or as insidiously as does a sapper his enemy in warfare. The sputum may vary greatly. It is well to recall the words of Sir William Jenner, "the brighter the blood, the less the weight of the patient, the better the prognosis." To this may be added, "the higher the fever, the slower the pulse, the better the prognosis." In the treatment of croupous pneumonia, let Nature's laboratory make the needed drugs. Do not try to treat the pneumonia.

Cotton jackets and poultices are remnants of barbarism. Coal tar antipyretics are contraindicated in all instances. There is a large amount of evidence that fever is a protective process or is indissolubly connected with the protective processes. Except in cases of distinct hyperpyrexia, with the temperature above 105 F. for a long period, even cold sponging is, as a rule, to be avoided, for the patient will not react. On the other hand, an agent which tends to lower the temperature and permit oxidation, and which is as nearly a specific remedy as any we have, is cold, fresh air. I would rather employ this method in croupous pneumonia than any drug with which I am familiar. It is hard on the nurse but it is life to the patient. A frequent mistake is that of treating symptoms simply because they are not in accord with the normal state. Any attempt to force the pulse, the respiration or the temperature to the normal line is futile and dangerous. When, however, any symptom or series of symptoms becomes so widely separated from the normal as to be dangerous or to indicate the approach of danger, it should be curbed. The administration of 10 drops of tincture of belladonna, three or four times in twenty-four hours throughout the greater part of the attack of croupous pneumonia, tends to prevent complications in the vascular apparatus. Atropin and strychnin are to be kept in reserve to be used in full dose to meet threatening collapse. In cases in which there is great cyanosis, in plethoric individuals, free venesection is sometimes of advantage. Estimation of the difference between the diastolic and systolic pressures is important. A diastolic pressure of 60 with a systolic pressure of 150 shows relaxed vascular tone but a powerful heart stroke, and that cardiac stimulants are not needed, whereas, a diastolic pressure of 70 and a systolic pressure of 110 may indicate that both vascular and cardiac stimulation is essential. With the possible exception of belladonna, which is used to prevent the sudden arising of complications, I have never seen any case of pneumonia which needed the same remedy in the same dose day after day. The skilled physician will fit the drug and the dose to the need of the patient at each visit. Expectorants in either type of pneumonia are never useful until the stage of resolution is developed.

Discussion on Symposium on Pneumonia During 1915 and 1916

Dr. Judson Daland. One should be on the alert to diagnose bronchopneumonia in the absence of the ordinary physical signs. The Roentgen ray has shown that the disease is frequently overlooked, particularly in very young children. I have often wondered whether, in cases of bronchopneumonia with associated nasal obstructions, exposure of the patients to the outer air, thus allowing direct entrance of the air through the mouth, is beneficial I believe that the fatal result in many infectious diseases is often due to the lack of resistance rather than to the infection With close study the probable degree of resistance under certain circumstances may be estimated

Dr William N Bradley In my experience with bronchopneumonia in children, the larger number have been of the primary type I agree with Dr Mills regarding treatment, except possibly in his hydrotherapeutic measures In quite young children I find that cold water is not well borne The initial chill of pneumonia is of more frequent occurrence in children than is generally thought to be the case I believe that serum therapy offers the ultimate solution of the problem of pneumonia

Dr William Egbert Robertson The large number of deaths from pneumonia is due to our own ignorance of the disease and of the proper method of handling it Pneumonia usually develops in individuals with a disease focus, if not tuberculous, probably intranasal, or an old sinus disease In some cases, beginning apparently as pneumonia, treatment of the nose will abort the disease, supporting the view that the nose may be a factor in the development of toxic forms of the organism Whatever be the character of the pneumonia, the important element is recognition of the type, that we may some day evolve a successful treatment

Dr H Brooker Mills I agree with Dr Daland that there are probably many more cases of pneumonia than are diagnosed as such, and I know from experience that the Roentgen ray is a very valuable aid in diagnosis in cases in which the clinical signs are either absent or atypical Abdominal pain has often led to the mistaken diagnosis of appendicitis It is fair to suppose that while tuberculous areas may not have predisposed to pneumonia, these areas provide a favorable culture medium for the pneumococcus and other germs I fail to see how it would be possible to abort a frank pneumonia by any form of nasal treatment

Dr H A Hare While recognizing the possibility of the ultimate value of serum therapy in pneumonia, I feel that that there are reasons in opposition to this solution of the problem For example, in a large number of cases, when we are called there is already blood tinged sputum, or exudate in the alveoli The process is in one sense complete Furthermore, we do not know in pneumonia when the primary infection has occurred We do know in typhoid that before a man comes to us he has been inoculated from twelve to fourteen days The presence of renal disease in a patient with pneumonia is of grave importance in prognosis Failure of treatment in such complication should not cast doubt on remedies useful in the ordinary case The same is true in heart conditions Alcohol is of value in that it dilates the peripheral capillaries, giving energy to the body and equalizing the circulation

Report of the Pneumonia Commission

Dr David Riesman The Pneumonia Commission is the outgrowth of a desire to find ways and means of lessening the incidence and death rate of pneumonia, and, to study the cause, mode of spread, prevention and treatment of the acute catarrhal affections that have prevailed in Philadelphia during the present winter A similar work was undertaken in New York in 1904, but was not carried far enough to be of material value in lessening the death rate of pneumonia Pneumonia, of all acute diseases prevailing in this climate, is the most serious and most fatal, and the one responsible for the largest number of deaths While the death rate from typhoid in Philadelphia has steadily fallen from 1,063 in 1906 to 111 in 1915, the death rate from pneumonia has been practically unchanged, and in some years, indeed, materially increased In 1914 there were reported in Philadelphia 1,436 cases of pneumonia, in 1915 there were 2,744 In December, 1915, 881 cases were reported, the largest number in any one month The number of cases of pneumonia reported does not indicate the total number of cases as, apart from the fact that many physicians do not report their cases, some of the complications of pneumonia are reported as the principal disease, the pneumonia, which is in reality responsible, being ignored This is true of some cases of meningitis and empyema and middle ear disease The present outbreak has shown that as an epidemic disease, pneumonia is as yet uncontrollable It has been held for years that the germ of pneumonia is present in the mouth of many healthy persons It seems, however, that this is not the case—that the germ actually found is quite harmless, while that causing pneumonia is virulent This discovery leads to the conclusion that pneumonia does not develop from within, but is conveyed to the patient in some way from a previous case. The commission is also undertaking an investigation of the recent grip epidemic, and is preparing to send out circulars to industrial establishments, schools, police and fire departments, reformatories, etc, for the purpose of determining the frequency of the disease and, perhaps, its mode of spread It also wants to obtain further light on the question whether grip predisposes to pneumonia The commission has divided itself into a committee on laboratory work and a committee on clinical investigation The plans of these committees are now ready What is needed to proceed with them is an adequate appropriation by the city to carry on the work, which is not only of great importance to the city, but which may, in the opinion of Director of Health Krusen, assume a national importance

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Obstetrics and Diseases of Women and Children, York, Pa

February, LXXIII, No 2, pp 193 384

1 Chronic Intestinal Stasis Report of Cases W S Bainbridge, New York
2 *Liver Function in Normal Pregnancy J C Litzenberg, Minneapolis
3 Compensatory (Vicarious, Ectopic) Menstruation, Xenomenia Memmes Devii W H Condit, Minneapolis
4 Eclampsia and Its Treatment W M Brown, Rochester, N Y
5 *Minor Surgical Gynecology C. E Ruth, Des Moines, Ia*
6 *Splenic Anemia with Splenectomy E D Clark, Indianapolis
7 Rovsing's Operation for Gastrocoloptosis, Report of Seventeen Cases Successfully Operated on G Torrance, Birmingham, Ala
8 Wound Dressings D H Stewart, New York
9 Quantitative Test of Abderhalden Reaction D D Van Slyke, *J R Losee and M Vinograd Villchur, New York*
10 Neuritis in Pregnancy F B McCarty, Chicago
11 Diaphragmatic Hernia G B Miller, Washington, D C.
12 *Pituitary Extract in Labor J J Mundell, Washington, D C.*
13 Respiratory Diseases as Factor in Causation of Infant Mortality W C Woodward, Washington, D C
14 Case of Partial Atelectasis with Capillary Bronchitis and Temperature of 110 F A Hymanson, New York

2 Liver Function in Normal Pregnancy—In 200 cases of so-called normal pregnancy examined by Litzenberg sixty-two gave the reaction for urobilinogen or urobilin In none of the cases was there evidence of blood dyscrasia, although some of the patients were quite anemic There were no complications which are known to be accompanied by reduced liver function except, possibly, eleven cases of valvular heart lesions and one of infection of the urinary tract with high fever In heart disease urobilinuria is not present unless there be decompensation In none of these cases was there marked clinical evidence of decompensation There were two cases with slight dilatation as well as hypertrophy in which there would be even more likelihood of heart weakness There were fifty cases in which the interference with the functions of the liver could be accounted for only by the pregnancy itself This still leaves 25 per cent of disturbed liver function during pregnancy attributable to no other cause than the pregnant condition

6 Splenic Anemia with Splenectomy—The histopathologic picture presented in the case cited by Clark is that of primary diffuse hyperplasia of the spleen (chronic splenitis) While Clark only claims great improvement after splenectomy, the patient in a recent letter considers herself cured

American Journal of Orthopedic Surgery, Boston

February XIV, No 2, pp 59 118

15 Deformities Due to Infantile Paralysis Operative Treatment E W Ryerson, Chicago
16 *Bone Grafting for Spinal Conditions Report of Forty Cases J T Rugh, Philadelphia.
17 *Fractures of Spine without Paraplegia Study of Eleven Cases J B Hartwell, Boston
18 Overlapping Joint as Substitute for Cuneiform Osteotomy P Hoffmann, St Louis
19 Case of Deposit in Supraspinatus Muscle Simulating Subacromial Bursitis. J Dunlop, Washington, D C

16 **Bone Grafting for Spinal Conditions**—Since June, 1912, Rugh has placed forty grafts in the spine for spondylitis, and in this series the mortality has been nil, and he has lost but one graft. The patients ranged in age from 3 to 54 years The disease had existed from six months to twenty-seven years prior to operation The kyphos was in varying stages of prominence, from very slight to very severe. The average length of time the cases remained supine was six weeks, and the average time of wearing a support was six months The average length of the graft was 6 inches, and there was no suppuration in any graft, though there were four or five cases of stitch infection The results are as follows excellent, twenty-six cases, improved, five cases, not relieved two cases, died, five patients (1 in twenty-seven months and 1 in fifteen months of pulmonary tuberculosis, 1 in eight months from heart disease, 1 in four weeks from pyocyaneus infection from mastoid disease, and 1 in two years from an unknown cause), not heard from, 1 case, and too recent for results, 4 cases

17 **Fractures of Spine without Paraplegia**—Hartwell says that fractures of the vertebral bodies and lumbar transverse processes are not infrequent injuries but are generally overlooked These fractures cause steady pain in the back but need not be accompanied by any neurologic symptoms Localized tenderness over the spinous processes should always suggest the possibility of fracture of the spine, and if in addition to localized tenderness there is a disalinement of the spinous processes, the diagnosis is almost certain The kyphos caused by compression fractures may readily be mistaken for the deformity of a bad posture Treatment should consist in prolonged fixation of the spine in extension by plaster jackets or permanent splinting of the spine by a bone grafting operation

American Journal of Public Health, Boston

January VI No 1 pp 1 96

20 Survey of Activities of Municipal Health Departments in United States F Schneider, Jr New York.
21 Wasters of World W C. Redfield
22 Role of Newspaper in Dissemination of Public Health News W A. Evans, Chicago
23 Sixteen Hundred Cases of Sickness and What is to Be Done About Them. E. A. Moree New York.
24 Comparison of Acid Production of Bacillus Coli Group Isolated from Various Sources W W Browne New York.
25 Report of Committee on Occupational Mortality W F Snow and others Sacramento, Calif
26 New Sampling Apparatus for Determination of Aerial Dust. G T Palmer, New York.

American Journal of Roentgenology, New York

January III No 1 pp 1 62

27 Teaching of Roentgenology in Undergraduate Medical Schools F C. Zapffe Chicago
28 Scope and Method of Teaching Roentgenology L. G Cole New York.
29 Experiences in Roentgenologic Teaching H K. Pancoast, Philadelphia
30 Simple Method for Marking Roentgen Ray Plates I. H. Levy, Syracuse.
31 Report on Three Interesting Head Lesions A W George Boston
32 Gastro-Intestinal Lesions Based on One Hundred Cases in which Roentgenologist was Present at Operation. L. T Le Wald, New York.

Annals of Surgery, Philadelphia

February LXIII, No 2 pp 129 256

33 *Localization of Cerebellar Tumors. E G Grey Boston
34 Cases of Calculi in Submaxillary Gland and Wharton s Duct. F S Mathews New York.
35 Tuberculosis of Tongue Report of Cases. L. Durante Rochester, Minn.
36 *Tanners' Ulcer J C DaCosta, J F X Jones and R C Rosenberger, Philadelphia
37 Multiple Cartilaginous Exostoses (Hereditary Deforming Chondrodysplasia) Report of Cases A P C Ashhurst, Philadelphia
38 *Treatment of Varicose Leg Ulcers. P G Skillern, Jr, Philadelphia
39 Artificial Periosteum for Fixation of Shaft Fractures J B Roberts, Philadelphia
40 Homoplastic Transplantation of Boiled Segment of Radius C A McWilliams, New York
41 Symmetrical Congenital Malformation of Extremities Report of Two Cases S W Boorstein New York
42 *Peritoneal Adhesions Their Prevention with Citrate Solutions M H Walker, Jr, Pittsfield, Mass., and L M Ferguson, Boston
43 *Id S Pope San Francisco
44 Surgery of European War E B Piper Philadelphia.
45 Fractures of Neck of Scapula. J M Hitzrot and R W Bolling New York

33 **Localization of Cerebellar Tumors**—Of fifty-eight certified cases of cerebellar and extracerebellar tumor examined by Grey, an unusual attitude of the head—tilted so that the ear approximated one shoulder—was found in twenty-three In the majority of these the change in position was slight Of forty-three certified cases of tumor lying anterior to the cerebellum only three showed any tilt of rotation of the head The unusual attitude in these three cases was scarcely noticeable These findings indicate that a tilt or rotation of the head in a patient with symptoms pointing toward an intracranial tumor is suggestive of a subtentorial new growth Backward retraction of the head was a feature in eight of the sixty cases of cerebellar and extracerebellar tumor Typical opisthotonos attacks appeared in two of these A similar position was noted in none of the cases with tumors lying anterior to the cerebellum Some form of suboccipital discomfort was present in forty-four, about 75 per cent. of the cases Tenderness in the subocciput was found in twenty-one 36 per cent. Suboccipital headache or pain was complained of in thirty-three, 56 per cent There was more or less soreness or stiffness of the neck muscles in eighteen, nearly 31 per cent. Of forty-three certified cases with tumors lying anterior to the cerebellum some degree of suboccipital discomfort was found in fourteen, approximately 33 per cent Suboccipital tenderness was present in eight, nearly 19 per cent Suboccipital headache or pain appeared in ten, about 23 per cent, soreness or stiffness of the neck muscles in six, 14 per cent As a rule, occipital discomforts were much less intense in the cases with tumors situated anterior to the cerebellum than in those with subtentorial new growths

36 **Tanners' Ulcer**—The authors describe an ointment which Dr Louis Levi, of Milwaukee, has been using successfully to prevent this disease He orders that the ointment be applied twice daily Three parts of petrolatum are mixed with one part of lanolin This mixture is melted on a water bath or stove and when melted and thoroughly mixed, 10 to 15 drops of 90 per cent. phenol are added to every 400 gm of the mixture. This represents 5 drops of phenol to 4 gm of ointment. The material is placed into a glass or earthenware jar and allowed to solidify until ready for use. The workman cleanses his hands and arms thoroughly with soap and water, rinses with warm water and, while the parts are still moist, applies the ointment. He rubs it over the whole exposed area for about two or three minutes He then takes a clean cloth and wipes the skin entirely dry The lanolin is absorbed by the skin and the petrolatum forms a light coating on the surface. The petrolatum will keep most of the chrome which causes the trouble away, but, should this outer coating of petrolatum wear off, the lanolin in the skin will still prevent the action of the chrome

38 **Treatment of Varicose Leg Ulcers.**—For the routine treatment of the average varicose leg ulcer Skillern uses Unna s zinc oxid and gelatin paste enmeshed in a gauze bandage so as to form a stocking with the consistency of rubber On the patient's return the Unna stocking is fenestrated at the site of the ulcer, as indicated by the area of staining from the discharge. In addition to fenestrating the stocking Skillern cuts the edge of the fenestration in a spoke like manner, to prevent congestion of the ulcer from the edge of the fenestration pressing into the edge of the ulcer After

the ulcer has been uncovered by fenestration of the stocking in this manner, it is treated by the rubber tissue, dry gauze, muslin bandage method After varicose leg ulcers have been cured, it is important immediately to institute prophylactic methods against recurrence, and for this purpose a well fitting silk elastic stocking or a Randolph bandage should be used Patients should be reminded that in the course of time a silk elastic stocking wears out and loses its power of supporting the tissues, and that for this reason a new stocking must be purchased at intervals

42 **Prevention of Peritoneal Adhesions**—This report gives the results of experiments made by Walker and Ferguson with hypertonic solutions of sodium citrate and sodium chlorid, used in the hope of preventing postoperative adhesions in the abdomen The authors state that hypertonic citrate solutions do, under certain conditions, prevent peritoneal adhesions after laparotomy The best solution is sodium citrate 3 per cent and sodium chlorid 1 per cent In human surgery, the citrate solution should, theoretically, be used as it has been experimentally, namely, after clean laparotomies, a sufficient amount of solution should be introduced into the abdomen to bathe the whole peritoneum (500 to 600 c c.) Smaller amounts would be of little value, for any fluid introduced into the abdomen soon becomes distributed over the whole cavity Practically, the question of whether or not the citrate solution will cause surgical shock in man must be determined by actual tests in the operating room If, as the authors anticipate, no shock is caused, the solution should be used as advised above When it is necessary to pack off intestines with gauze, if the pack is wet with citrate solution, much fewer adhesions should result Absolute asepsis is essential Adhesions cannot be prevented in the presence of infection Gentleness in handling peritoneum is important, for the more injured peritoneum left after operation, the greater is the likelihood of adhesion formation Large areas denuded of peritoneum should be covered by plastic operations or omental grafts, for the larger the denuded areas left, the more difficult is the prevention of adhesions Iodin should be used in abdominal surgery with great care, or better, not used at all, for a very little of it allowed to touch the bowel causes masses of adhesions Dry gauze should not be allowed inside the abdomen

43 **Prevention of Peritoneal Adhesions**—Pope reports on the use of a solution of citrate of soda 2 per cent with sodium chlorid 2 per cent in some 400 abdominal sections All sponges and gauze pads were moistened with this solution In about twenty cases, a considerable quantity of the solution was left in the abdominal cavity This amount ranged from 4 ounces to a pint Since this procedure causes pain and partially rouses the patient it has been found expedient to have the incision almost closed before introducing the liquid The abdominal wounds do show more oozing during closure, but in no case has it seemed to lead to failure of union or to postoperative bleeding There is no evidence to show that the liability to infection is increased, but, on the contrary, where peritonitis was present, a marked improvement seems to have occurred The character of cases in which a quantity of solution was left in the abdominal cavity included general postoperative adhesions, acute obstructions, pus tubes, colectomies, resections and tuberculous peritonitis

Archives of Ophthalmology, New Rochelle, N Y.

January, XLV, No 1, pp 1 108

46 Acidosis and Edema in Its Relation to Glaucoma H Smith, Amritsar, India
47 Histologic Findings After Iridotasis F H Verhoeff, Boston
48 Lumbar Puncture and Examination of Spinal Fluid in Affections of Eye J B Ayer, Boston
49 Massive Granuloma of Sclera (Brawny Scleritis), Report of Unusual Case G S Derby, Boston
50 Torticollis Relieved by Tenotomy of Inferior Oblique A Duane, New York
51 Local Anesthesia in Exenteration and Enucleation of Eyeball with Novocain Solution H Illig, Munich
52 Examination of Visual Field in Glaucoma and Its Value for Differential Diagnosis W Lohlein, Greifswald

Boston Medical and Surgical Journal

February 10, CLXXIV, No 6, pp 187 222

53 Sir James Paget and Paget's Disease E C Cutler, Boston
54 Organization for Care and Transportation of Sick and Wounded in British Expeditionary Forces in France R I Lee, Boston
55 Occurrence of Wassermann Reaction Among Hospital Patients A A Hornor, Boston
56 Treatment of Central Nervous System Syphilis. I C Walker, Boston
57 Treatment of Syphilis C M Smith, Boston

Bulletin of Johns Hopkins Hospital, Baltimore

February, XXVII, No 300, pp 29 62

58 **Influence of Pituitary Feeding on Growth and Sexual Development* E Goetsch, Baltimore
59 Case of Pseudohermaphrodism, Abnormal Function of Endocrine Glands W C Quinby, Baltimore.

58 **Influence of Pituitary Feeding on Growth and Sexual Development**—A very intensive study was made by Goetsch He found that the dried powdered pituitary extract derived from both the anterior and posterior lobes of the gland, when fed to young rats in excessive doses (0 1 gm daily), causes failure to gain in weight, loss of appetite, increased peristalsis, a mild enteritis, and certain nervous manifestations, such as muscular tremors and weakness of the hind limbs The latter symptoms are undoubtedly due to the posterior lobe element in the whole gland extract, for they are similarly produced by using posterior lobe, but not by using anterior lobe extract Even when whole gland is fed over a short period of time, from twenty-five to forty days, it causes a more rapid growth and development and gain in weight, larger nipples in the female, and a coarser, drier, harsher growth of hair than are seen in either control animals or after similar administration of ovarian (corpus luteum) extract in equivalent dosage In comparison with the development in control animals, the ovaries, tubes and cornua of the uterus of animals fed with whole gland extract are larger, more vascular and edematous in appearance, indicating increased development and activity The testes show a considerably earlier growth and development The feeding of pituitary anterior lobe extract causes increased weight and greater and more vigorous body growth and development over the control There is similarly an earlier and more active genital development The fur is harsher and thicker Loss of weight, enteritis, and nervous manifestations are not observed as in the beginning of whole gland feeding After prolonged feeding of anterior lobe extract, over a period of eight or nine months, the sexual instincts are early awakened, along with the early maturity of the sex glands

The feeding of pituitary anterior lobe to parent rats exerts its stimulating influence on the offspring in intra-uterine life and during lactation, and, when the experiment is carried further, and the feeding to the young is continued after weaning, it has an even greater stimulating effect on growth, weight and development, and causes earlier and more frequent breeding, and an increased number of offspring in the litters The stimulating effect on the sex glands is greater, the longer the influence of anterior lobe administration is exerted The extract of pituitary posterior lobe, even after prolonged administration, does not stimulate growth in general, nor the development of the sex glands, as does anterior lobe even after a very short period The posterior lobe element in the whole gland extract has an undoubted retarding influence on the development of the sex glands, an effect very similar to that of ovarian extract on the testes Ovarian extract (corpus luteum), when fed to the male, especially, causes a tendency toward the deposition of fat, not only in the body generally, but in the testes and other glands as well, with a resultant marked increase in weight The fur is heavier and coarser than in the animal fed with the posterior lobe extract It does not cause an early descent of the testes The latter are slightly heavier than those of the posterior lobe fed animal Following ovarian feeding there is, as compared with conditions in the control, increased development and activity of the female sex glands

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

February VIII, No 8 pp 129 152

60 Diagnosis of Malignancy in Mammary Gland. A. C Harrison, Baltimore.

Canadian Medical Association Journal, Toronto

January VI No 1, pp 1 96

61 Origin of Naso Antral Polyp D J G Wishart, Toronto
62 Dermatology and General Practitioner W S Walsh, Providence, R I
63 Treatment of Squint. J A MacMillan
64 Static Joint Disease J A Nutter, Montreal
65 Cortical Localization G Jefferson Victoria, B C.
66 Stab Wound of Liver F J Tees, Montreal

Delaware State Medical Journal, Wilmington

November 1915 VI, No 12 pp 1 22

67 Difficult Diagnosis in Typhoid B A Jenkin, Wilmington

Journal of Cancer Research, Baltimore

January I No 1 pp 1 123

68 *Origin of Tumors in Mice Part Played by Internal Secretion in Spontaneous Development of Tumors A. E C. Lathrop and L. Loeb St. Louis.
69 Mortality from Cancer in Western Hemisphere F L. Hoffman, Newark, N J
70 *Effect of Phloridzin on Tumors in Animals F C Wood and E. H McLean New York.
71 *Pathologic Aspects of Some Problems of Experimental Cancer Research. J Ewing New York.
72 Transplantable Sarcomas of Rat Liver Arising in Walls of Parasitic Cysts G L. Rohdenburg and F D Bullock, New York
73 Chemotherapeutic Experiments on Rat Tumors. R. Weil, New York.

68 **Origin of Tumors in Mice**—Lathrop and Loeb have found that castration of female mice below the age of 6 months leads to a very marked decrease in the cancer incidence of these animals, although they have not so far succeeded in preventing cancer altogether under these conditions The cancer age is increased in castrated female mice. Castration in mice above the age of 6 months has so far been without effect. The prevention of breeding in female mice decreases the cancer incidence and increases the cancer age, though to a much smaller degree than does castration Nonbreeding female mice reach a higher age than breeders These results are interpreted by the authors as due to the influence of the corpus luteum on the growth of the mammary gland, and as the first experimental demonstration of internal secretion as an etiologic factor in the spontaneous development of cancer The chemical action is superimposed on a hereditary factor distinct from the former

70 **Effect of Phloridzin on Tumors**—In the experiments cited by Wood and McLean the animals were injected with phloridzin in suspension in olive oil Treatment was begun, as a rule, seventeen days after inoculation All treated animals were kept rigidly on a diet of meat and lard, while the control animals were given the regular laboratory diet of dry bread and vegetables From time to time, at the end of the second or third day period following injections of the phloridzin, the collected urines were examined for sugar with Fehling's solution and were found to give a positive reaction in the case of the treated animals on the carbohydrate-free diet, while the urine of the untreated animals as well as a phloridzin solution gave a negative reaction The animals under treatment rapidly became emaciated, the fur roughened, and they appeared to be very ill, a great many died soon after the beginning of the treatment. For the experiments with the Buffalo rat sarcoma, 324 animals were inoculated, with 90 4 per cent. of "takes" For the experiments with mouse sarcoma No 180, 396 mice were inoculated, with 97 7 per cent. positive. Among the mice bearing spontaneous tumors and Crocker Fund mouse sarcoma No 180 there were no cases of absorption of the tumors under treatment. The Buffalo rat sarcoma showed a much smaller percentage of absorption among the treated animals than among the controls, 37 per cent. as compared with 58 4 per cent. In the majority of the experiments the growth among the treated animals was much more vigorous than that among the controls Considering the very great variability of growth of the Buffalo rat sarcoma, as well as the high percentage of cases of spontaneous absorption occurring constantly, but with a great irregularity in different series of animals, the futility of using this tumor for therapeutic experiments or of basing conclusions on such investigations, is at once evident Any "cures" obtained in work with the Buffalo rat sarcoma must be ascribed to spontaneous absorption rather than to the effect of the therapeutic agent

71 **Problems of Experimental Cancer Research**—Ewing is of the opinion that we must regard all forms of neoplasms as being specific diseases, connected only by the fact that they are neoplastic in greater or less degree, but differing in their etiology, clinical course, and therapeutic possibilities In the same way, tuberculosis and bubonic plague are infectious diseases of inflammatory nature, but they are quite as closely related as Fibiger's gastric carcinoma of rats and pipe smokers' cancer of the lip The habit of regarding cancer as a protean disease of uniform significance may well be abandoned in the interests of progress

Kentucky Medical Journal, Bowling Green

February XIV No 2 pp 57 104

74 *Digitalis Its Indications and Use W W Anderson Newport.
75 Intensive Treatment of Syphilis I N Bloom Louisville
76 Heart Complications in Acute Infectious Diseases. A. L Thompson Madisonville.
77 Conditions. Resulting from Cardiovascular Disturbances with or without Organic Changes of Heart and Vessels W F Boggess, Louisville.
78 Syphilis of Heart J R Morrison, Louisville
79 Puerperal Eclampsia H T Crouch, Bardwell.
80 Pneumonia J Glahn Owensboro
81 Usefulness of Roentgen Ray and High Frequency in Treatment of Skin Lesions V Blythe Paducah
82 Colles Fracture. L. L Robertson, Middlesboro

74 Abstracted in The Journal, Oct. 23, 1915, p 1484

Laryngoscope, St. Louis

January XXVI No 1 pp 1 80

83 Recent Progress in Otology G L Richards Fall River, Mass
84 Roentgen Ray Diagnosis of Mastoiditis. E Amberg Detroit
85 Larynx in One Hundred Fatal Cases of Pulmonary Tuberculosis G Fetterolf Philadelphia
86 Lupus of Larynx. G W Stimson Pittsburgh.
87 Upper Respiratory Passages in Habitual Users of Cocain and Heroin R F Ridpath, Philadelphia
88 Evolution of Specialist in Otolaryngology D J G Wishart Toronto, Canada

Medical Record, New York

February 5 LXXXIX No 6 pp 223 264

89 Value of Transfusion in Atrophic and Devitalized Infants and Children L. Fischer New York
90 Influenza and Grippe in Infants and Children C. G Leo-Wolf, Buffalo
91 Enteroptosis F Robbins New York.
92 Therapeutic Action of Carbonic Acid Brine Baths (Nauheim Baths) in Cardiovascular Diseases J H Honan Augusta Ga.
93 Vitality of Cholera Vibrio in Water of New York Bay A J Gelarie Rosebank.
94 Treatment of Gonorrheal Ophthalmia. C Barnert New York.
95 Two Unusual Strains of Diphtheroid Bacilli R R. Mellon, Ann Arbor, Mich

Military Surgeon, Washington, D C

February XXXVIII No 2 pp 123 243

96 Preparedness of Medical Department for War H C. Fisher U S Army
97 Secondary Hemorrhage in Military Surgery W H Morriss.
98 Greater Field of Activity for Fleet Surgeon D N Carpenter U S Navy
99 Postgraduate Instruction at Army Medical School W. H Arthur Washington, D C
100 Army Motor Ambulance. K. Nelson U S Army
101 Leprosy as Major Pestilence G W McCoy, Hawaii
102 Wheel Litter Travois W W Reno U S Army
103 Management of Trench Latrines in Semipermanent Camps. W C Montgomery New York.

New York Medical Journal

February 5 CIII No 6 pp 241 288

104 Acute Appendicitis J B Deaver, Philadelphia.
105 Prompt Cure of Gonorrhea G A. Wyeth New York
106 Criminology from Standpoint of Psychiatrist. M J Karpas New York.

107 Pollutions in Male M Hühner, New York
108 Bronchiectasis from Standpoint of Bronchoscopist S Yankauer, New York
109 Case of Eclampsia A Comstock, New York
110 Meningeal Hemorrhage in New Born Report of Case M J Lippman, New York

New Orleans Medical and Surgical Journal

February, LXVIII, No 8, pp 501 566

111 Allen Treatment of Diabetes J T Halsey, New Orleans
112 Little Points of Importance in *Abdominal* Work E L King, New Orleans
113 Evidence to Account for Increase of Appendicitis P B Salatich, New Orleans
114 Problems in Psychiatry M J De Mahy, New Orleans
115 Case of Hematuria *Relieved by Intravenous Injections of* Emetin Hydrochlorid J F Points, New Orleans
116 Case of Retroperitoneal Appendix Case of Volkmann's Ischemia I Cohn, New Orleans

Oklahoma State Medical Association Journal, Muskogee

February, IX, No 2, pp 27 52

117 Splanchnoptosia T J Martin, Oklahoma City
118 Conservation of Health J W Duke, Guthrie
119 Preventive Medicine as *Relates to Child* W G Little, Okmulgee
120 Common Natural Therapy Applied in Conservation and Improvement of Infancy and Childhood N E Lawson, Oklahoma City

Ophthalmic Record, Chicago

February, XXV, No 2, pp 55 108

121 Tuberculosis of Eye, Treatment W E Gamble Chicago
122 Case of Unilateral Optic Atrophy, Sole Symptom of Pituitary Growth F Krauss, Philadelphia
123 Detachment of *Retina Improved if Not* Cured C Loeb, St Louis
124 Simple Tonometer for Clinical Use W N Souter, Boston
125 Corneoscleral Subconjunctival Seton in Glaucoma Simplex K K Wheelock Fort Wayne, Ind
126 *Subconjunctival Rupture of Eyeball* E *Blake,* New Haven, Conn
127 Cilia in Anterior Chamber C P Small, Chicago

Southern Medical Journal, Birmingham, Ala.

February, IX, No 2, pp 99 192

128 Glucosurias J S McLester, Birmingham
129 Clinical Diagnosis of Acute Leukemic States L F Barker, W A Baetjer and S R Miller, Baltimore
130 Physics of Bronchopneumonia P F Barbour, Louisville, Ky
131 Differential Diagnosis of Skin Manifestations in Pellagra from Other Dermatoses C Swanson, Atlanta, Ga
132 Pellagra, Etiology and Treatment W E Deeks, New York
133 *Forty six Consecutive Cases of Pellagra Treated with Cacodylate of Sodium B H Booth, Drew, Miss
134 *Small Town, Neglected Unit in Sanitary Administration A W Freeman, Washington, D C
135 Effect that Sanitary *Work Accomplished in* Cuba and in Panama Has Had and Will Have on Sanitation of Tropics W C Gorgas, Washington, D C
136 *Sex Question in Public Health I Dyer, New Orleans
137 *Concentration Method for Diagnosis of Malaria W Krauss and J S Fleming Memphis, Tenn
138 Renaissance of Urology H H Young, Baltimore
139 Sterile Woman F W Griffith, Asheville, N C
140 Intracranial Hemorrhage Due to Traumatic Rupture of Arteria Meningea Media Report of Six Cases L H Landry, New Orleans
141 Skin Grafting J L Crook, Jackson, Tenn
142 Ocular Manifestation of Fifth Nerve *Irritations* E H Cary, Dallas, Tex
143 Method and Value of Blood Clot in Mastoid Operation F D Boyd, Fort Worth, Tex

133 Pellagra Treated with Cacodylate of Sodium—Booth treated sixteen patients in 1914 and thirty in 1915, with cacodylate of sodium, with only one death *He gave adults* an injection deep into the muscular tissues, about 7 grains once a week, children in proportion He thinks that if diet alone is the cause of the disease these patients would not have recovered so easily and, further, that the disease is caused by a mildly infectious organism

[illegible] and 136 Abstracted in THE JOURNAL, Dec. 11, 1915, [illegible]7 and 2118

[illegible]ncentration Method for Diagnosis of Malaria—[illegible]leming *divide the technic into two steps* 1, that [illegible]he blood, 2, that of making the smear For [illegible]lood, sterile cork stoppered bottles are pro[illegible] 10 to 20 c.c of a solution made by dis[illegible]emically pure sodium citrate and 0 85 gm

46 Histo
47 Lumba
48 of Ey
49 **Massive**
Unusual Ca
Torticollis Relie
New York
51 **Local Anesthesia**
Novocain Solut
52 **Examination** of Vis
ential Diagnosis

chemically pure sodium chlorid in 100 c.c freshly distilled water The bottles should be sterilized once with their contents *To remove blood for diagnosis,* a sterile 2 c.c all glass syringe is first charged with 0 5 c.c solution, filled from a vein, and the contents immediately injected into the bottle The mixture should not contain more than 20 per cent of blood It is then lightly shaken and replaced in the bag *Technic for making smears* Add the amount of formaldehyd solution indicated in the chart Usually about 0 5 c c of a 1 10 dilution of official 37 per cent formaldehyd to the smaller bottles will give good hemolysis and good fixation *Small rings are well fixed in one hour Large tertians and gametes stain best after four hours of contact* with formaldehyd They can be recognized, however, after fixation for one hour Quicker fixation may prevent hemolysis, and can not be recommended After fixation, using the system suitable to the time available, *the contents of the bottle are* put into a centrifuge tube and spun fifteen minutes at 2,500, or ten minutes at 3,000 revolutions per minute Most of the leukocytes form a cream on the surface of the deposited blood, and can be pipetted off with the supernatant fluid, preferably with a vacuum pump The tube is then filled with distilled water, shaken until hemolysis is complete, centrifuged again, the fluid poured off and slightly drained, and the *remainder drained on a slide, dried,* fixed and stained in the usual way Beautiful pictures are obtained in fifteen minutes

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FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

January 22 I, No 2873, pp 117 152

1 *Soldier's Heart J Mackenzie
2 Irritable Heart of Soldiers R McN Wilson
3 *Certain of Vascular Phenomena of Heart Disease. B Parsons Smith
4 *Heart s Action in Jaundice J D Windle
5 *From Visible to Gamma Ray Spectrum S Russ
6 *Sodium Hypochlorite in Treatment of Septic Wounds F J A Dalton

1 Soldier's Heart—At least 90 per cent of the cases that have been certified and treated as heart affections, Mackenzie says, are *not primarily* heart cases, and the principles of treatment applicable to the patients are widely different from those who suffer from heart failure The chief complaint is an absence of the feeling of being well, they often feel out of sorts *A sense of fatigue or exhaustion easily induced* is common to all Breathlessness on moderate exertion is frequent, and more infrequent is pain over the region of the heart The physical signs are variable The heart's rate is often *not increased, in some it is persistently increased,* as frequent as 120 per minute More frequently, at rest the rate may be quite moderate, but exertion, sometimes slight, may produce an undue rapidity, and it is in consequence of this excitability that the term "irritable heart" has been used Murmurs, systolic in time and heard in different regions, are frequent, while an increase in size, usually slight, is not uncommon In a few cases there is a slight edema of the legs *The mental condition is* somewhat varied Periods of depression are not infrequent, and the patients are often *very irritable They accept the view that they have* something wrong with their hearts and readily yield to all restrictions, and are often content to lie in bed and brood over their woes The principles of treatment should be devoted to increasing the health of the body as a whole in such a way as to increase the natural resistance to infection, to eliminate toxic influences, and brace up the whole man bodily and mentally The best way to achieve this is by fresh air and judicious exercise in the fresh air

3 Vascular Phenomena of Heart Disease—Parsons-Smith urges that every *heart case must* undergo a minute examination of the heart itself, its size, rhythm, sounds, etc we must undertake a rather more generalized study of each particular patient, inquire into the condition of the kidneys and their excretive powers, form some opinion as to the condition of the arterial walls estimate the blood pressure and pulse tension, glean additional information from graphic tracings taken from the large superficial vessels, from electrocardiographic records, and by the method of direct vessel auscultation particularly of the great venous and arterial channels at the root of the neck, and must detail a selection of the causes which warrant their very careful study

4 **Heart's Action in Jaundice**—Windle investigated the heart's action in a number of jaundiced patients, in some he found the pulse infrequent, in some irregular, in others both infrequent and irregular, but he has not been satisfied in any case that the jaundice was responsible for the infrequency or the irregularity Slowing of the ventricle to 40 or below, whether occasioned by disease or poison, is, with rare exception, due to partial or complete heart block A pulse rate about 50 to 55 a minute is not uncommon in patients with jaundice when free from fever and the patient is kept in bed but this is not proof that the jaundice is the cause of the slow pulse, the patient's normal pulse rate must be known, and how it behaves in other conditions, because the pulse has a tendency to become infrequent in many nonfebrile illnesses when patients are confined to bed The slowest pulse rate Windle met with due to total bradycardia, in an adult with jaundice, was 50 a minute In a number of cases he has found a pulse rate of 40 and below, but the heart rate has been double the pulse rate, the infrequent pulse being due to an alternate premature beat of the ventricle too feeble to send a wave to the wrist

6 **Sodium Hypochlorite in Treatment of Septic Wounds**—The advantages observed in the employment of the sodium hypochlorite solution in the treatment of septic wounds are briefly stated by Dalton as follows (1) the simplicity and cheapness of preparation of the antiseptic, (2) being nontoxic and nonirritating to the tissues when properly prepared according to Dakin s formula, the hypochlorite solution may be safely used in large quantities over long periods of time without ill effects, (3) the deodorant action of the solution is remarkable The fetor from gangrenous tissues usually disappears in twenty-four hours, (4) the rapidity with which sloughs separate and clean granulation tissue is formed in a wound under its influence, (5) the infrequency of redressing required for wounds treated as described with hypochlorite compared with the constant change of dressings required in large wounds with other forms of antiseptic, (6) the fact that the injections of the hypochlorite solution into the rubber tubes used in the dressings may with safety be entrusted to imperfectly trained orderlies without fear of ill results, once the case has been adequately dealt with by the surgeon

Dublin Journal of Medical Science

January III No 579 pp 1 70

7 Meningitis Serosa T G Moorhead
8 Infantile Tetany S Sheill

Journal of Laryngology, Rhinology and Otology, London

January XXXI No 1 pp 1 32

9 Throat Nose and Ear Diseases and Their Treatment in John Hunter s Time. W H Kelson
10 When Shall We Operate in Chronic Maxillary Sinusitis and What Form of Operation Shall We Choose? R. H Skillern
11 Primary Tuberculosis of Pharynx and Larynx in Male Sixty Nine Years of Age J B Horgan
12 Columnar Carcinoma of Ethmoid, Operation and Cure J B Horgan
13 Bullet Wound on Nose. W F Wilson

Journal of Tropical Medicine and Hygiene, London

January 15 XIX No 2 pp 17 28

14 *Pellagra W M McDonald.
15 Occurrence of Bodies Resembling Seidelin Bodies" (Paraplasma Flavigenum?) in Anemic and Fetal Blood J W Cropper and A H. Drew

14 **Pellagra.**—McDonald is of the opinion that no investigation into the etiology of pellagra can be complete which does not include within its scope the determination of the absent element in the dietary of pellagrins On the assumption that all fatty articles of diet, such as butter, cream, etc, are more or less expensive and therefore not obtainable by the poorer classes, he suggests that it is possible that a deficiency of fat in the diet may prove to be a factor in its causation The fact of the great prevalence of pellagra in state institutions in all parts of the world as compared with its total absence among attendants and employees in such institutions, is rather in favor of this theory, for the inmates are entirely restricted to institution dietaries, which dietaries are, as a rule, very deficient in fatty elements, whereas the attendants even in cases in which rations are provided, are at liberty to supplement their diet at will But whether the deficiency be of fat or of some other element of diet, McDonald believes that pellagra only occurs among those persons who by reason of poverty or confinement in an institution, or eccentricity of taste, or constitution, such as dyspepsia are debarred from exercising a natural selection in regard to articles of diet The author has not found any treatment which could be considered successful Arsenic does not seem to have much effect on the course of the disease Diarrhea is treated with usual remedies In mild cases *rest and increased dietary appears to benefit the* patient

Lancet, London

January 22 I No 4821 pp 173 226

16 Clinical Thermometry Continuous and Quasi Continuous Temperature Records in Man and Animals in Health and Disease (To be continued) G S Woodhead and P C Varrier Jones
17 *Bactericidal Power Acquired by Serum After Administration of Salvarsan or Neosalvarsan S R. Douglas and L. Colebrook
18 Biology of Vermiform Appendix. W C MacKenzie.
19 *Friedlander s Pneumobacterium A R Friel
20 Case of General Tetanus Following Local Tetanic Spasms of Injured Limb T B Mouat
21 Gastrotomy in Baby Aged Six Months C P G Wakeley
22 Stretchers for Wounded in Trenches G H Colt

17 **Bactericidal Power of Serum.**—Neosalvarsan and salvarsan in watery solutions possess, according to Douglas and Colebrook, a very distinct bactericidal power against staphylococcus when the strength of the solution is 1 in 6 000 When the solvent largely consists of blood or serum this power is slightly diminished The bactericidal power of solutions of both these preparations appears to be practically the same The administration of neosalvarsan in ordinary doses renders the blood fluids markedly bactericidal This power lasts but a short time, and seems to reach its maximum about one hour after the administration of the drug, diminishing rapidly in the third and fourth hours Heating the serum to 60 C for from ten to twenty minutes has no deleterious effect on this bactericidal power, showing that it is not in any way due to the development of immune bodies in the serum, and this fact, together with the short period in which the serum is found to be bactericidal, strongly suggests that the bactericidal power is due to some arsenic compound in solution in the blood serum Salvarsan which, as mentioned above, has almost identically the same bactericidal power as neosalvarsan in in vitro experiments, gave practically no demonstrable bactericidal power to the patient s serum when ordinary therapeutic doses were administered, but it was constantly noticed that organisms which had been treated with serum obtained within three hours of the administration of the drug grew very much more slowly than normally and were agglutinated into masses In view of the distinct bactericidal power which the serum acquires after the administration of neosalvarsan the authors believe it is reasonable to hope that the administration of this drug, or some similar preparation, would have a beneficial effect on wound or other similar septicemias, and might even strikingly assist in the sterilization of deep and irregular suppurating wounds

19 **Friedländer's Pneumobacterium**—In treating patients suffering from ozena Friel finds that to get rid of the Friedländer infection it is advantageous to give the vaccine intravenously He uses as a dose two millions of a sensitized nonsterilized emulsion in salt or distilled water, which is injected into a vein at the bend of the elbow or in the forearm

Bulletin de l'Académie de Médecine, Paris

January 4, LXXV, No 1, pp 1 20

23 *Spiroscopy Training to Increase the Breathing Capacity (Entrainement respiratoire par la methode spiroscopique) A Robin
24 *Intensification of Natural Decomposition after Death (Desintegration par proteolyse microbienne) I Bordas and S Bruere

23 **Training the Respiratory Apparatus**—Robin expatiates on the advantages of Pescher's spiroscopy, described in these columns January 29, p 386 He styles it "an innovation in *medicine most fertile in results in practical* application The lungs are exercised by their own efforts and in the simplest and most physiologic way, while the play of the bubbles in the water keeps up the interest and stimulates to renewed efforts" The method is in constant use now in a number of French hospitals, and is proving most valuable in overcoming the effects of wounds of the chest and of disease It is especially valuable for prophylaxis in children The little ones enjoy it as a game, and the narrow-chested may double their breathing capacity with it in a few weeks Robin saw a demonstrative case recently The auscultation findings had become suspicious in a 10 year old girl, both of whose parents had died young of tuberculosis Under spiroscope exercises the condition became completely transformed in a few months

24 **Means to Hasten Decomposition After Burial**—Bordas and Bruere have been experimenting on an extensive scale and here announce that it is possible to hasten materially the disintegration of corpses by supplementing the action of the ferments of putrefaction within the cadaver by the action of similar ferments applied from without The ferments of urea were found most efficient for the purpose, especially with moisture and warmth The practical method proposed is to line the grave or ditch with straw to keep in the heat from the microbian fermentation processes, the straw to be well watered with cultures of the ferments of urea A horse was buried in new moist wheat straw watered every second day for six days with 30 liters of a bouillon culture of urea ferments (They give no details as to the preparation of this putrefaction-promoting fluid) By the end of three weeks the skeleton was bare, all the flesh was gone except a few scraps of fascia tissue, the joints had come apart and even the skin had disappeared, nothing but the tail being left intact, separate from the skeleton Admission of a little air promotes the disintegration Not only during the war but in cemeteries everywhere great hygienic progress would be realized they reiterate, by thus intensifying the normal work of Nature

Journal de Chirurgie, Paris

September, 1915 XIII No 4, pp 329-440

25 Resection of Elbow for Ankylosis Consecutive to Gunshot or Shell Wound (De la resection du coude dans les ankyloses par blessures de guerre) A Mouchet and R Gouverneur
26 Primary Resection of Wounded Elbow Indications, Technic and After Treatment (De la resection dans les plaies articulaires du coude par projectiles de guerre.) R Leriche

Paris Médical

January 15, VI, No 3, pp 57 96

27 The War and Tuberculosis (La guerre et la tuberculose 1914 1915) L Landouzy
28 Prophylaxis of Tuberculosis during the War (La defense sociale contre la tuberculose pendant la guerre) L. Renon
29 Typhoid in the Tuberculous and Tuberculosis Following Typhoid (Fievre typhoide et tuberculose) L Bernard
30 Sanatoriums for Tuberculous Soldiers (De l'hospitalisation temporaire et economique des tuberculeux de guerre) F Dumarest and A Vigne, (L'assistance et l'education des tuberculeux de la guerre dans les stations sanitaires du ministere de l'interieur) H Labbé.
31 Roentgen Diagnosis of Tuberculosis (Utilité de la radioscopie pour la *selection rapide* des tuberculeux aux armees) H Grenet
32 Tracheobronchial Glandular Lesions Mistaken for Projectiles and vice versa (Adénopathies tracheo bronchiques et projectiles de guerre) A Weil

Presse Médicale, Paris

January 13, XXIV, No 2, pp 9 16

33 Dorsal Friction Sounds in Nephritic Pericarditis with Much Effusion (Le frottement pericardique dorsal dans les pericardites brightiques a grand epanchement) Chauffard
34 Measures to Arrest the Spread of Venereal Disease (La prophylaxie antivenerienne par les administrations civiles et militaires) F Balzer

Berliner klinische Wochenschrift

January 3, LIII, No 1 pp 1 28

35 Importance of Immobilizing Dressings in Treatment of Wounds of Bones and Joints (Wichtigkeit feststellender Verbande bei der *Behandlung von Knochen* und Gelenkschusswunden) W Körte.
36 Experiences of an Ophthalmologist with the Troops on Active Service. (Kriegs ophthalmologische Erfahrungen und Betrachtungen) W Uhthoff
37 *Spirochaeta Pallida in the Cerebrospinal Fluid (Ueber die Infektiosität des Liquor cerebrospinalis bei Syphilis) R Fruhwald and A Zalozlecki
38 Wounds of Neck and Urethra (Kasuistische Mitteilungen zur Kriegschirurgie) M Litthauer

37 **Demonstration of Spirochaeta Pallida in the Cerebrospinal Fluid**—Fruhwald and Zalozlecki review what has been written on this subject and report the results of their own research They tested the cerebrospinal fluid by injecting it into the testicles of rabbits The results they obtained added to those previously on record show positive findings in primary and secondary syphilis, without nervous manifestations, in a total of 2 cases (none before the eighth week), in secondary syphilis, from the third to the twelfth month, in 7 cases, never in tertiary syphilis In the cases with objective nervous symptoms in early syphilitic meningitis, once, neurorecurrence (eight months), once, apoplexy and hemiplegia (seven months), once, (one year), once, syphilitic meningitis, once, spinal syphilis (ten years), once, tabes, 2 cases, and progressive paralysis, 5 cases In inherited syphilis, soon after birth, 2 cases, syphilitic leptomeningitis later in life, once, and juvenile paralysis, once This compilation includes Frühwald and Zalozlecki's *23 syphilitic patients tested in this way* Spirochetes were found in only 4 of the total 23, once in recent secondary syphilis, once in older secondary syphilis (without nervous symptoms), once in early meningitis, and once in progressive paralysis They add that large numbers of others with tabes, paralysis and brain syphilis were also tested, *with constantly negative results* The inoculation lesion in the rabbit testicle was so slight that only the microscope disclosed its positive nature. The data presented *show that the cerebrospinal fluid is only rarely infectious* The fluid otherwise may or may not be normal, and there may or may not be a positive seroreaction and *symptoms on the part of the nervous system* There is thus no regularity in the findings

Correspondenz-Blatt fur Schweizer Aerzte, Basel

January 1, XLVI, No 1, pp 1 32

39 The Progress of Surgery (Fortschritte der Chirurgie) H Iselin.
40 *Pellagra in Switzerland (Ueber den pellagrösen Symptomen komplex bei Alkoholikern in der Schweiz.) J Jadassohn *Commenced in No 52*

40 **Pellagra in Switzerland**—The main points in this article were reviewed in these columns February 12, p 539

Deutsche medizinische Wochenschrift, Berlin

January 6 XLII, No 1, pp 1 32

41 *The Spirochete Nodosa as Cause of Infectious Jaundice (Zur Aetiologie der Weilschen Krankheit. II) E Hübener and M Reiter
42 Agonal Thrombosis H Ribbert
43 Work in Treatment of Nervous Affections in Soldiers (Weitere Erfahrungen mit der Heilbeschaftigung nervenkranker Soldaten) R Wollenberg
44 *Mixed Infection with Epidemic Meningitis H Silbergleit and K v Angerer
45 Canned Culture Mediums (Erfahrungen mit dem Buchsenagar von Uhlenhuth und Messerschmidt in China) H Dold
46 Simplified Technic for Bacteriologic Research (Anstellung der Agglutinations Reaktion nach Widal und Gruber Durham) K Brauer, (Färbung von Tuberkelbazillenpraparaten) K Brauer
47 Burns from "Light Balls", Four Cases (Verbrennung durch *Leuchtkugel*) Goebel
48 Preparation for the Prothesis after Amputation (Vorbereitende *Behandlung der Beinamputierten*) J Lewy
49 *The Urochromogen and Diazo Reactions (Permanganreaktion und Diazoreaktion) S E C Bosch
50 Compulsory Hospital Treatment as Penalty for Exposing Others to Venereal *Disease* (Wie soll der Geschlechtsverkehr Venerischer bestraft werden?) A Blaschko, (Die Bestrafung des Geschlechtsverkehrs Venerischer) F Ebermayer
51 Old Women's Psychology (Altweiber Psychologie) v Luschan

41 **Etiology of Infectious Jaundice**—Hübener and Reiter say that Uhlenhuth's report of the results of his research has confirmed their previous statements in regard to the causal importance of the spirochete which they isolated from patients with Weil's disease (Mentioned in The Journal February 19, p 610)

44 **Mixed Infection in Meningitis**—Silbergleit and von Angerer report six cases connected by time and locality, and one with no such connection, in all of which the symptoms indicated epidemic meningitis with sepsis and an extensive petechial exanthem All cases terminated fatally notwithstanding serotherapy was applied at once In the four cases examined for the purpose, mixed infection was apparent.

49 **Comparison of Urochromogen and Diazo Findings**—Bosch relates that in examining about 1,000 specimens of urine the diazo reaction never occurred without the urochromogen reaction, and the latter was encountered twice as often as the former in advanced cases of tuberculosis About 96 per cent. of the patients with the urochromogen reaction and 100 per cent of those with the diazo died in less than eight months thereafter She gives the precision technic for both

Medizinische Klinik, Berlin

Dec 26 1915, XI No 52 pp 1417 1432

52 Gunshot and Shell Wounds of the Fingers. (Zur Behandlung der Fingerschusse.) H Schloffer
53 *Hypnosis in Treatment of War Hysteria. (Zur therapeutischen Verwendung der Hypnose bei Fallen von Kriegshysterie.) M Nonne Commenced in No 48
54 Technic of and Experiences with Vaccination against Cholera and Typhoid (Die Erzeugung der Impfstoffe und Massenimpfungen in Krakau gegen Cholera und Typhus in der Zeit des Krieges 1914-15) O Bujwid
55 Aphonia and Mutism from Fright Neurosis. (Funktionelle Sprachlahmung im Felde.) W Scholz.
56 *Fulminating Meningitis with Atypical Symptoms (Ein unter eigentumlichen Symptomen auftretender Fall von Meningitis cerebrospinalis epidemica fulminans.) N Rosenbaum
57 Simplified Technic for Counting Bacilli in Sputum C Martin

January 2 XII, No 1 pp 1 30

58 Tardy Disturbances after Injury of the Skull (Ueber Spaterkrankungen nach Schadelverletzungen) A Passow
59 *Experiences with Tests of Kidney Functioning (Funktionelle Nierendiagnostik.) C von Noorden
60 Affections of the Urinary Organs from Chilling (Kriegserfahrungen uber Erkaltungskrankheiten der Harnorgane) V Blum
61 Operative Treatment of Traumatic Rupture of Right Rectus Muscle O Orth
62 *Vaccine Therapy of Typhoid after Prophylactic Inoculation (Zur Vaccinetherapie des Typhus abdominalis bei den prophylaktisch Geimpften) K. Mayer
63 Technic for Amputation of Leg (Zur Methode der Unterschenkelamputation) Neuschafer

53 **Hypnosis in Treatment of War Hysteria.**—This article was summarized in the Berlin Letter in The Journal, February 5, p 440

56 **Meningitis Simulating Diabetic Coma**—Rosenbaum reports the case of a woman factory worker of 32 who complained one day of headache and became unconscious, with great motor restlessness, tossing her arms around and even tumbling out of bed the eyeballs constantly turning to and fro, and with incontinence of urine but no fever, edema or eruption The urine findings were approximately normal except for a positive response to Trommer's test and the ferric chlorid test. This led to the assumption of diabetic coma until the next day showed the responses much fainter and at 7 p m symptoms of acute epidemic meningitis developed, but without fever The pulse jumped from 88 to 120 and lumbar puncture showed a pressure of 280 mm water, with meningococci The third hour there was slight fever and it ran up high the next morning, when the woman died, scarcely three days after the premonitory symptoms It was learned later that she had suffered from headaches for some time and had taken medicines for them, which explained the urine reactions Necropsy disclosed extensive purulent leptomeningitis

59 **Estimation of Functional Capacity of the Kidneys**—Von Noorden reviews his extensive experiences with the various technics that have been introduced for this purpose. Five have stood the test of time, he says, and the findings with these are about all we can count on for insight into the condition at the moment, the indications for treatment, and estimation of the outlook These five are the tests with an excess of salt, of urea, of water, the potassium iodid test, and the determination of the residual nitrogen in the blood He gives 0.2 gm potassium iodid in a delicate gelatin capsule on an empty stomach, swallowed with 50 c c. water The urine is then drawn with a catheter every five minutes and the saliva is examined every three or five minutes, the latter merely to ascertain when the capsule has been dissolved In normal conditions the iodin reaction occurs in the saliva after an interval of from eight to twelve minutes, in the urine from three to five minutes later With gastric dyspepsia the reaction in both may be delayed for five or ten minutes When the reaction is much slower in appearing in the urine than in the saliva, the kidneys are at fault A delay of from twenty to thirty-five minutes is moderate, from this to sixty minutes or above is extreme All the iodin should be eliminated in from twenty-four to thirty hours He has encountered extreme cases in which iodin was still to be found in the urine after five days The salt and urea tests are made with 10 gm salt or 15 gm urea given with a test diet of milk rice and dried fruit with 3 gm salt. His experience has confirmed that the kidneys vary in eliminating salt and urea, sometimes one and sometimes the other is retained, in the mixed forms of kidney disease But in the majority of cases it is exclusively one or the other He warns in conclusion that a single determination of the residual nitrogen in the blood is not conclusive, but a progressive rise in the residual nitrogen is a grave sign Venesection gives no permanent relief All these tests require scrupulous care and a standard diet, otherwise the findings may be misleading The aim with all is to ascertain the limits of tolerance as in diabetes and gout

62 **Vaccine Therapy of Typhoid**—Mayer departed from the usual routine treatment of typhoid and applied active immunization in treatment when he had a group of sixteen cases all in men who had been vaccinated against typhoid from one to four months before. His impression is that the disease was rendered milder thereby The excreta were found free from typhoid bacilli two weeks afterward

Münchener medizinische Wochenschrift, Munich

January 4 LXIII No 1 pp 1 36

64 *Cesarean Section (Zur Kaiserschnittfrage.) M Hofmeier
65 Clinical Study and Bacteriology of Paratyphoid A Bacillus A Schmitz and L Kirschner
66 Experiences with and Present Status of the Ninhydrin Reaction (Zur Technik und klinischen Verwertbarkeit der Abderhaldenschen Reaktion) E Bunzel and F Bloch
67 *Atropin for Convulsions in Children (Atropin bei Eklampsia infantum) F Rascher
68 Color Sense of Bees (Zum Farbensinn der Bienen.) F Schanz.
69 Transfusion of Blood for the Wounded (Ueber die Anwendung der Blutubertragung in der Kriegschirurgie.) L Eloesser
70 Treatment of Prolapse of Brain Substance (Behandlung von Gehirnprolapsen im Felde) E K. Frey
71 Combination of Kocher and Bassini Technics for Herniotomy (Kombinierte Methode der Radikaloperation der Leistenhernie) E Grunert
72 To Close Fistulas after Wounds of the Intestines (Der Verschluss von Eingeweidefisteln nach Schussverletzungen) R Dobbertin
73 Iodoform or Petroleum Protects Dressing Material against Lice. (Zur Verhutung der Verlausung von Verbanden.) v Stubenrauch and Zucker
74 Surgical After Treatment of the Wounded (Die chirurgische Nachbehandlung der Kriegsverletzten.) M Strauss
75 Emergency Artificial Legs (Schwierige Immediatprothesen) F Seidler

64 **Cesarean Section**—Hofmeier has compiled 194 cases of transperitoneal cesarean section with 3 deaths The list includes 45 from his own service, with one fatality, 19 from Baisch's with no mortality The other 2 deaths were in Franz's 130 cases Adding to these Küstner's 110 extraperitoneal cesarean sections with no mortality, we have a total of 304 cases of cesarean sections by other than the classic

specific treatment if it were not for the fact that direct syphilitic involvement of the nervous system may manifest itself by symptoms and serologic findings resembling those of progressive paralysis while—unlike the latter—they may prove amenable to specific treatment It is justified therefore in every case of this kind

His results in eight cases of tabes were far more encouraging All but one displayed marked benefit from the treatment It seemed to be as effectual when the neosalvarsan was injected intravenously as by the more complicated Swift and Ellis technic, which he applied in five of the eight cases No untoward by-effects were observed in any of the total eighteen cases, and no change occurred in the cell content of the fluid nor in the Nonne albumin reaction In the tabes cases, the pupil and Achilles tendon reflexes did not seem to be modified but the distressing headaches and visceral crises were much benefited, as also the annoying incontinence of urine. The ataxia persisted unmodified, except in one case in which there was improvement such that the patient could get around the house

112 **Life Insurance in the Tropics**—Romer comments on the way in which life insurance in the tropics is profiting by the progress of recent years in tropical medicine He refers particularly to the Dutch East Indies where hygiene is reducing the policy rates for candidates He cites a life expectancy table compiled by Ulpianus for the Roman army in the second century after Christ, and compares it with a table compiled for the Netherlands by van Pesch for the years 1890-1899 The life expectancy for the age 20 to 25 in the Roman table was 30 years, in the Netherlands table, 41 2 From 40 to 50, in the Roman, from 19 to 10 years, and in the Netherlands 25 9 years Römer has found that the life expectancy for officials in the Dutch East Indies is 5 years less up to 35, 4 years less at 40, 2 years less at 50, while at 70 it averages the same as in the Netherlands No statistics are available for non-officials, he says, there being nothing comparable to the mortality records published by the Mutual Company of New York. Romer reiterates that the direct influence of the tropical climate has been much exaggerated Eykman's researches have established that the metabolic processes show no appreciable difference in the healthy in the tropics from those of cooler climes The intestine may be in a condition of lessened resistance, but this is the result of errors in diet, especially overloading with rice The mortality among Europeans seems to be highest the third year of their residence in the tropics, then the fourth and fifth On return to a temperate climate they are liable to pneumonia, and amebic dysentery may be responsible years later for an abscess in the brain or liver Chronic malaria, sprue, heart disease and, especially, gout may reduce the life expectancy after return to Europe An assumed simple cardialgia or gastritis may be the first manifestation of an ulcer or cancer He urges that careful records be kept of persons who have returned from a residence in the tropics

Abuse of alcohol or tobacco is an important factor in the life expectancy in the tropics, and if the candidate is a total abstainer, the cause for this should be investigated The danger of syphilis is greater in the tropics, and tuberculosis runs a particularly malignant course there To this contributes the fact that the heart beat is accelerated on an average ten beats a minute and the respiration often by 4 5 Especially in the tropics, married men are better risks than the unmarried, as there is greater care for hygiene Lands newly opened to colonization reduce the life expectancy somewhat A tendency to corpulence is particularly isky in the tropics on account of the disinclination to exercise and the tendency to overeat.

113 **The Blood in Whooping Cough**—Benstz tabulates the findings in sixty-three cases of whooping cough, classifying them in infants under 1 year and children up to 6 years of age There was always leukocytosis, most pronounced when there were bronchitic complications The number of eosinophils was below normal in every case, while the mononuclears and transitional forms were much increased, reaching 18 per cent at the height of the disease. A detailed report is also given of systematic treatment with various drugs No effect was evident with most of them, but some favorable action was manifested by extract of belladonna, from 1 to 6 mg three times a day

Hospitalstidende, Copenhagen

January 12, LIX, No 2, pp 25-44

114 Amyotonia Congenita (Myatonia congenita—Oppenheims Sygdom —og congenit familiær progressiv Muskelatrofi) K H Krabbe Commenced in No 1

115 Modified Technic for Recording the Pulse (Et praktisk Vink ved Registrering av Pulsen) C Lundsgaard

Hygiea, Stockholm

LXXVII No 24, pp 1489 1558

116 Induced Pneumothorax in Treatment of Pulmonary Tuberculosis, Sixty Cases (Behandlingen av lungsot med konstgjord pneumo thorax) H Wetterdal

117 Centric Photographing of the Fundus of the Eye (*Om* centrisk fotografering av ögonbottnen) J W Nordenson

Norsk Magazin for Lægevidenskaben, Christiania

January, LXXVII No 1 pp 1 180

118 Simultaneous Occurrence of Several Independent Tumors (Om samtidig forekomst av flere selvstændig voksende—multiple—svulster) F Harbitz. To be continued

119 *Management of the Prematurely Born (Om behandlingen av for *tidlig fødte barn*) *T Frølich*

120 *Examination of Air and Dust for Tubercle Bacilli in Sanatorium (Undersøkelser angaaende tilstedeværelse av virulente tuberkel baciller i luft og støv paa Reknes sanatoriums værelser) E Kaurin

121 *Dietetic Treatment of Beriberi in Dutch East Indies (Indberet ning om forsøk paa beri beripatienter med tørrede erter og havregryn) D J H Pol

119 **The Prematurely Born**—Frølich tabulates the temperature, weight and other details of three prematurely born infants in his private practice Notwithstanding all the efforts to warm up the children their temperatures kept abnormally low, going sometimes below 36 C (96 8 F) He emphasizes the necessity for guarding against overfeeding, especially with milk containing much fat From 110 to 120 calories per kilogram is his rule, giving them in the form of skimmed milk with addition of flour and sugar, as Birk recommends, if breast milk is not available The generally accepted opinion that 140 calories per kg are needed he thinks is a mistake. The prematurely born are peculiarly predisposed to infections and especially to complications on the part of the respiratory tract, and hence absolute isolation from other children is indispensable in the home

120 **Tubercle Bacilli in Air and Dust.**—Kaurin inoculated animals with culture mediums long left exposed to the air in rooms occupied by the tuberculous Also with dust from the toilet rooms, hall and other parts of the sanatorium where the inmates congregated No acid-fast bacilli could be detected in any of the seven groups of tests, and none of the fourteen animals showed any sign of infection These findings harmonize with the experiences of the seventeen years during which none of the attendants or other persons connected with the sanatorium has contracted tuberculosis

121 **Dietetic Treatment of Beriberi**—Pol found that large amounts of a puree of peas had an unmistakably curative action on beriberi As much as 150 gm of the puree three times a day was required for this, smaller amounts showing no benefit Oatmeal had a similar influence, but 125 gm three times a day were necessary Europeans did not require quite so much The minute details of eighty-six cases are tabulated, filling thirty-three pages A native bean seems to have also an effectual action These three vegetables evidently contain the substance or substances the lack of which induces beriberi Attention is called to the fact that these vegetables lose their efficiency in this line with age Three-year old beans seemed to be quite inert

Ugeskrift for Læger, Copenhagen

January 6, LXXVIII No 1, pp 1 32

122 *Epidemic of Scarlet Fever (Scarlatina Epidemien i Lyngby og Omegn 1912 1913) J Lemche

122 **Scarlet Fever Epidemic**—This is an epidemiologic study of 473 cases of scarlet fever in four *months* in 1913 in a Danish town The mortality was 4 86 per cent

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STATE HEALTH ORGANIZATION *

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The purpose of this paper is to discuss the general principles which are likely to be most useful in planning legislation, or mapping the sphere of the state's share in the preservation of the public health

The first essential for efficient state health organization is a strong executive A board, or committee, is almost never successful in executive work What is needed is one person clothed with full executive power It makes no difference whether he is called commissioner, health officer or director He alone should appoint subordinates, control the finances and define policies His term of service should be at the pleasure of the appointing power His salary should be adequate He should devote his entire time to the service He should be trained in public health work

The difficulty is to get such a man The greatest hindrance is politics How to eliminate politics is the great problem In some states at present it seems to be hopeless The citizens seem to be perfectly willing that their executives should work for the party instead of the state Most persons agree, however, that the degree of political prostitution depends, to some extent, on the form of organization

One plan to avoid political entanglements, which has been tried in several states, is to give the medical societies a share in the management of the health department It is dangerous and unwise to give to nonrepresentative bodies a share in the government Moreover, medical men as a body are not skilled in preventive medicine Only great benefits, not to be otherwise secured, would warrant such a delegation of authority It must be remembered that medical politics and medical log rolling are at times as pernicious as any other form of partisanship There are four states in which the state medical society, or societies, control the department, or a majority of the board, and one in which the society elects a minority of the board Most excellent work has been done in some of these states, but equally good work has been done under other forms of organization in states in which other conditions are no more favorable

Most reformers think that much can be accomplished by fixing responsibility One man, they say, should make appointments Hence the tendency is to provide that the governor shall appoint the heads of all departments At present the governor appoints the executive of the state health department in less than a third of the states In a number of these the department is overturned every time there is a new governor, and the public funds are wasted by an inefficient department On the other hand, in many states which have attained the highest rank in sanitary affairs, and in many in which the executive has to his credit long years of efficient service, he obtains his position in another way

In every state in the Union it has, for one reason or another, been thought desirable to have a board of health, and in all but one it is prescribed by law The older plan for the selection of a state health officer is by election by this board This prevails, practically, in thirty states This seems to me to be at present by far the best way to secure and keep an efficient executive, provided the board is constituted in such a way that its membership is likely to change slowly, and provided it has no other executive power It will probably be objected that it is illogical to give the board of health this one executive duty of such very great importance and to grant it no other So it is, but some of the most useful governmental institutions are illogical and the result of compromise A continuous board seems, in the light of experience, to be less likely to inject politics into its selection than is the governor, and it is still less likely to do so if it has no other direct executive authority Moreover, if the board has no direct authority in the selection of employees and in the expenditure of funds, the governor is less likely to use appointments on the board to reward political workers who are looking for a place with something in it Of course the selection of the state health officer by the board will not certainly save the office from politics, but it will render it far less likely to become a part of the spoils system Another safeguard is to provide that the board shall not elect one of its own members as executive officer This not only tends to eliminate politics, but it also prevents the development of jealousies and friction within the board

The executive officer should be skilled in sanitary science and have had administrative experience, and it is perhaps well enough so to provide by statute, but this of itself will not secure a good choice It is important that the selection should not be confined to residents of the state as it is now in some states by statute and, in one at least, by the constitution Generally it is unwise to prescribe qualifications, because these, if specific, are rarely helpful, and conditions may arise under which they hamper

After the selection of the executive comes the important matter of rule making Here the question of constitutionality arises, and lawyers and courts are not in entire agreement Decisions vary in different states, and local conditions must be considered before framing

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* Read at the *Joint Session of the Council* on *Health* and Public Instruction of the American Medical Association and the Federation of State Medical Boards Chicago Feb 8 1916 abstract of discussion Society Proceedings The Journal A. M A Feb 26 1916 p 685

any legislation While in some states the courts have sustained a very broad grant of legislative power to the state department of health, in others the authority to do this has been denied It is generally admitted that it is unwise, if not unconstitutional, to confer on a single commissioner legislative authority, or even much rule making power This, then is an important reason for the establishment of a board of health, or, as it is called in its newer form, a public health council Many of our leading health officials believe that rule making and advising should be its sole functions I think that no harm and much good will come from having it choose the health commissioner That such a board may be of great value in advising the commissioner and by supporting him throughout the state is shown by experience, but this will depend on the character of the board and can scarcely be provided for by statute

Such a board may well consist of seven, or six if the commissioner is to be a member, one to be appointed each year The exact number is not important, but the complexion of the board should not be easily changed It does not seem to be important whether the commissioner is, or is not, a member Ex officio members are not usually of much value It does not seem wise to prescribe qualifications of members They should be men of character, interested in public health, but not experts If they are experts they are likely to interfere with the real executive To appoint an engineer, or an attorney, for the purpose of getting advice free, for which the state ought to pay, is reprehensible It is unusual for the members to receive compensation, and this seems the wiser plan

While there is some doubt about the wisdom, and in some states about the constitutionality, of granting to the state board of health practically unlimited power in sanitary legislation, practically all health officials are agreed that there is a large body of administrative rules relating to notification, isolation, disinfection, milk, food, water, sewerage and the like, which it is absurd to expect that the legislature is competent to enact properly as law The legislature has neither the time nor the knowledge, and unless it accepts, without amendment, a code drawn up by experts, the results are likely to be crude and unsatisfactory The best way is to give to some small body, like the state board of health, this rule-making power, and this board will, in its deliberations, be guided by the expert advice of its executive officer It is only by means of rules that sufficient flexibility of legislation can be obtained Delays in the proceedings of the legislature are often numerous and extended, and statute law cannot be relied on to keep legislation abreast of scientific progress

Whether the board is to be given full legislative authority by some such phrase as "said board is authorized to adopt a code for the preservation of health," or whether certain subjects, such as those previously mentioned, are to be specified, concerning which it may make rules, depends on the constitutional provisions and the court decisions of the state in which the matter is under consideration This rule-making power is regarded as one of the most important functions of the department of health

If the decision is that broad legislative power cannot be granted to the department, the greatest care should be taken in drawing up the statute which is to specify the subjects on which the board may make administrative rules As many subjects as possible should be included, and the act should be so worded as to give to the board the greatest possible latitude under the constitution as interpreted by the courts

The principal functions of the department of health are indicated by the divisions, or bureaus, which are found in the department in the larger states Sometimes these divisions are provided for in the organic law, especially in the newer enactments More often they have developed naturally with the gradual growth of the department It is perhaps well enough to provide for them in the organic law, but if this is done, provision should also be made that the executive of the department may modify, rearrange, add to or subtract from them It is most unwise to provide rigidly for such matters, for, within a very brief time, functions which now receive little attention may become of the greatest importance Who knows how soon a special bureau will be needed for cancer, for the venereal diseases, or for circulatory and renal diseases? Who knows how soon local laboratories will be so generally established that the diagnostic work of the state laboratory may safely be neglected?

FUNCTIONS OF THE HEALTH DEPARTMENT

1 The first duty of the department is to secure the complete registration of vital statistics It is no mere academic expression to say that this is the foundation of all public health work Vital statistics are of the utmost practical importance How is it possible to know how much attention to give to tuberculosis, how much to typhoid fever, how much to the distribution of antitoxin for diphtheria, unless it is known how prevalent these diseases are? How can we be certain what towns have a safe water supply unless we know how many people die of typhoid fever? Statistics alone can show whether the most attention should be devoted to the city water supply, or the country privy What is the infant death rate? Is the case fatality of diphtheria too high? Is tuberculosis decreasing as fast as it should? These vital questions, vital in every sense of the word, can be answered only by an accurate registration of births and deaths Only twenty-five states are in the registration area for deaths, and ten in the provisional area for births—a poor showing, but indicating great recent progress

2 The control of communicable diseases is still the chief function of the health department Under present conditions little will be done except in the largest cities unless the state department takes the initiative All but three, or four, of the smallest states need an epidemiologist, a real epidemiologist The large majority of the states need more than this They need a well organized, well financed division of communicable diseases Few states are thus provided Most of them are content to rush out their executive officer to hurry calls for smallpox outbreaks Little systematic routine work is done Perhaps a dozen states are trying properly to keep the run of communicable diseases, and most of them are not too successful The first requisite for control is notification Notification is much better in the cities It is the duty of the state officials to make it equally good all over the state

The Public Health Service in 1914 attempted to utilize reports of communicable diseases from only thirty states An examination of the case fatality shows that in less than a dozen is it likely that diphtheria is reported with sufficient accuracy to make returns of any use for either statistical or administrative purposes The reports of typhoid fever and tuberculosis are far less satisfactory than for diphtheria The number of communicable diseases is so large and the amount of work to be done is so great that some have thought it best to have separate and coordinate divisions in the health department for certain diseases, as tuberculosis or hookworm infection The trouble with this arrangement is that the disease thus honored receives more than its due attention The communicable disease work ought to be well balanced, and at first thought it would seem best to have one man in charge of all communicable diseases If this makes the bureau too unwieldy, and separate divisions seem to be necessary, the executive should see that they are properly balanced This is no easy task, as the legislature is quite likely to decide matters under pressure from enthusiasts who can see nothing but tuberculosis, or trachoma, or hookworm or venereal disease

The diagnostic laboratory is at present an important part of the state health department It, too, may well be a subordinate portion of the epidemiologic division If coordinate with the latter, the executive has another task in seeing that the two really are coordinate and work together effectively The time ought to come when the state laboratory will be able to abandon its diagnostic work to local laboratories scattered over the state, and will be free to devote itself to the administrative and research problems of the central department

It is only by the proper development of epidemiologic work that the enormous value of antitoxins and vaccines can be secured to the people of the state These must be distributed free and freely, and must at times be administered Whether it would be better for the free distribution to be by the state or by the local governments is perhaps a local question In some instances the state appears to do it with advantage In others, the towns or counties seem to do their share well If it is left to the local government, the state department should see that there is a good law and that the local governments do their duty

3 Child hygiene is a subject which has been much neglected In most of the larger Northern cities it has been shown that infant mortality can be markedly reduced by proper efforts Infant mortality has been excessive, not only in the large cities, but fully as much so in the smaller urban communities, and conditions in villages are often equally as bad Over large sections of the country, in the absence of statistics, it is not even known what the infant mortality is That there is scarcely a place where it is not possible to reduce it greatly is improbable The saving of babies' lives is one of the most effective and certain lines of public health work It gives quick returns The death rate is reduced the first year While the actual work of baby saving is essentially local, the state can set the wheels in motion, as has recently been well illustrated in New York No state can longer afford to neglect this field

The medical inspection of schools does not yield such brilliant results Not many lives are directly and immediately saved The improvement of countless minor evils, even if they were such as to cause further trouble, is not spectacular Both city and the state health departments have allowed school officials to take the initiative in school inspection This is unfortunate, as school inspection is essentially a health function of the state It is very desirable that all the health work of a city, or state, be centered in one department School inspection is medical work, and the medical work of the state and its municipalities is certain to increase It will be unfortunate to have it scattered among different departments The health department should be the controlling factor in all state medical work

4 The supervision of water and sewerage is a most important function of the state This requires the services of one or more engineers, chemists and bacteriologists Other matters, such as schoolhouse and institution construction, offensive trades and other nuisances, and land drainage often require the services of this division, though the promotion of the purity of water supplies is its most important duty Some of the smaller states find an engineer with chemical and bacteriologic training sufficient to do most of the needed work, but all the larger states require a well organized division sometimes with many employees At present about half of the state health departments have no engineer in their employ

5 Public health education is rightly considered of very great importance It should occupy a good part of the attention of every department Almost all health officials imagine that they are particularly qualified for carrying on educational work While a great many health officials have the knack of writing catchy paragraphs and of interesting hearers at a lecture, few are really well fitted to have charge of the educational division Such a person should first of all have sound judgment It is necessary to select the wheat from the chaff It is impossible to teach everybody everything Attention should be focused on what is most important Essentials should be adhered to rather than every new slogan repeated that is sounded by some enthusiast The choice of method, too, is as important as the choice of subject Novelty is not always to be sought What is necessary is to make knowledge sink in To catch the ear or the eye of the populace for a moment does not always do this What the department needs is a teacher, not an advertiser

6 In sixteen states the health department is charged with the administration of the pure food laws, though in some of these practically nothing is done by the department The prevention of adulteration is the chief purpose of most of these laws, and this phase of the subject embraces most of the food work The prevention of adulteration, except in a few instances, is an economic, not a health problem It is true that the sanitary handling of food does, in some directions, and to some extent, affect the public health, and practically all of the state departments of health engaged in the prevention of adulteration do attempt to secure greater cleanliness in the handling of foods, though how effective this is, at times, is open to question There is a difference of opinion as to whether or not there should be a food division in the health department As this is a matter which no more affects health than a thousand and one other things, and as it diverts energy and money from purely health work, and as it is likely to arouse opposition to the health department on the part of powerful interests, it would seem better on the whole not to undertake this line of effort Still, as some departments have long and successfully carried on food work without detriment, it is perhaps safe to allow the decision to depend on local

conditions The sanitary control of milk is of much more importance, but here again there is difference of opinion as to what should be done, or how much should be done The attempt of the state really to control the entire milk supply has never been very successful Perhaps the best work for the state is to educate, to secure legislation to permit of efficient local control, and to assist local officials, especially those in the smaller communities

7 In the last analysis, the success of most public health measures depends on the man on the spot In other words, there must be local health officials to carry out the details of many of the most important measures of disease prevention This is by far the weakest point in the whole public health system. The larger cities are doing fairly well Most of the small towns are not Most of the rural portion of the country is doing nothing Health administration cannot be left to work out its own salvation Some outside agency must at least point out the way This is properly the business of the state It is the duty of the state health department to strive to make health work efficient all over the state

All sorts of schemes have been suggested, and some of them have been put in effect None have been in successful operation long enough to show that an ideal has been found A number of states last winter had carefully prepared bills to improve local health administration, but they did not receive favor at the hands of the legislators Conditions vary a good deal, as to prevailing diseases, wealth, density of population, political customs and ideals What may prove to be the best plan in Massachusetts probably would not be the best in California or Mississippi As regards methods of local health work we are still in the experimental stage

Where the township form of government is well developed, township health officers have very generally been provided for by law In many states it would be difficult to get away from the township idea The attempt to do so has been unsuccessful in some states Is it not the wisest course, in such states, to accept frankly the township health officer? Of course in most townships there is not enough work for a full time officer The part time health officer cannot be left to himself He must be under continuous supervision by the state, thus becoming practically a deputy under a district supervisor This is the Massachusetts plan, and seems to me to be the best solution of the problem for the present in a number of states The combination of townships, or of towns, with a full time health officer, which has been successfully accomplished in a few instances, ought to be brought about in many more

In some parts of the country, as in the South and some parts of the middle West, the county is thought to be the proper unit for efficient health work In most instances a full time health officer is necessary for successful county work, and many who are most conversant with the conditions believe that they warrant the employment of a full time man In some counties, even with a full time health officer, deputies also might be needed

In other parts of the country, where the population is not so dense and where for other reasons not so much work per square mile needs to be done, artificial districts, consisting of combinations of counties, are suggested In these districts, and indeed in some of the large counties found in the Mountain and Coast states, deputies are necessary, though on account of the great area rather than because of the number of people to be cared for

The local health officers and deputy health officers who do the bulk of the routine work must be good men The manner of selecting them is of great importance Most state officials believe that they ought to be appointed by the state This is the practice in only a very few states There are decided objections to the plan, the most important of which is the danger, almost a certainty under present condition of morals, of building up a political machine Whatever our theories may be about this, there is great popular as well as political objection Popular regard for home rule makes it an impossible measure, probably, in most states The bills presented last year in Indiana, Kansas, Michigan and Ohio, I believe, all provided for local election All of these bills did, however, provide for some sort of control of qualifications This would seem to be a legitimate, useful and acceptable means of state control

It is also recognized that even good men will not work and should not be asked to work without adequate compensation In Florida and in a good part of Pennsylvania the state pays, as well as appoints, the local health officer It seems to be impracticable, and I believe it to be unwise, to do this in most states Instead of this the compensation which is to be paid by the local governments may be fixed by the state This attempt, too, has not been very successful, but it gives better promise than the plan of having the state carry on all local administrative work at its own cost.

Whether there are county health officers township health officers, or district and deputy health officers, in order to have an efficient local administration there must be an effective supervision by the state department of health All health officers need, and most desire, help from without The state department of health should be prepared to give this help It should also have authority to compel action Even with a full time health officer in every county, supervision by the state would be necessary Even without authority, and without any reorganization of local health institutions, in probably nearly every state, great improvement could be brought about by the continued efforts of even one skilled administrator who should devote his time to the stimulation of local health officers and of the communities in which they work To do this requires no novel legislation and no radical change in policy One such unofficial advisor may be appointed this year and another next year, or the year after It is a promising field open now to every state department of health

Most health officers believe it is a great help if the state has some means of coercion Many communities can be persuaded to do right, others cannot Some people will listen to reason only when they know that they must It is wise to give executive power to the state department of health If it is known that the state can step in and abate nuisances and control communicable diseases, it may compel local officials to act Often local officials are glad of this pressure, which to them is a help The pressure is greater, if, when the state acts, the cost becomes a charge on the local government If this authority is exercised with discretion, it will be wholly for good Believing that it will be so exercised, legislators have not been markedly adverse to conferring such power on the state department of health, and it has been done in almost half of the states

There is one other point which ought to be emphasized and that is the desirability of having as much as possible of the health work of the state centered in the health department To have a number of commissions and boards, as well as the state university, working independently in the field of preventive medicine is bad It does not make for economy or efficiency, and it prevents solidarity in education and administration The public is annoyed and rendered skeptical by a multiplicity of inspections, rules and precepts It is highly desirable to utilize the scientific knowledge of the university and infuse its scientific spirit into public health work, but I am old fashioned enough to believe that it is not desirable for the university to take on administrative functions, and it is not desirable for it to engage in any kind of public health work except under the direction of the health department

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SOME ESSENTIALS TO THE DEVELOPMENT OF EFFICIENT HEALTH ORGANIZATION *

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With the beginning of the present public health movement several years ago, comparative analyses were made by me of the state and territorial laws relating to health organization More recently, on request of their respective authorities, investigations of the health organizations of ten states and certain cities have been made by officers of the Public Health Service In consequence of these studies, and the relations with state and local authorities in health work, a clearer idea has been gained, not only of the immediate needs of these agencies, but also of certain principles that should be utilized in their further development

Certain of these needs are fundamental, and are like some of those with which the federal health agency has to contend Among the needs referred to, in the order of their importance, may be mentioned (1) awakened interest and support on the part of the public, (2) adequate personnel and appropriations, (3) cooperation of health agencies with each other

These fundamentals are emphasized here because, regardless of character of organization, no health agency can be efficient without one or more of them, and because their absence has undoubtedly been largely responsible for the lack of growth of health organization and health work heretofore

ACTIVE INTEREST OF THE PUBLIC IN ITS HEALTH AGENCIES

Lack of public interest in health matters in the past may be attributed to numerous causes In an early day the need of common defense against other dangers took precedence over the defense against sickness The country was sparsely settled, and there was no rapid means of communication In consequence, such health agencies as existed were local, and established primarily to meet emergencies

In a later day, economic advantage was evaluated above health possession As a result, growth of health organization was stimulated for the most part only by the danger of epidemics Following the epidemics of the thirties, fifties, seventies and nineties, many new laws were placed on our statute books, but between epidemics, by reason of our political system, little or no interest was taken by the public in health matters The enforcement of sanitary laws was accordingly left largely to political appointees As a result, with few exceptions, health boards did not have the full confidence or support of the public generally

When in recent years interest in health matters did begin to manifest itself (and this was only one manifestation of a general desire on the part of the public to insure to individuals their social rights in greater degree), it was oftentimes through private agencies newly organized for specific purposes that the work was carried on, and not through already organized health agencies One of the striking signs of the times is the increasingly large number of these associations and societies aiming at a common object, few of them properly correlated with each other or with official organizations In consequence, there has undoubtedly been duplication of effort as well as lack of uniformity, and existing health authorities have not been supported or relied on as they should have been in furthering public health organization and public health work In part at least this had had a deterrent effect on growth of these health agencies

In those countries in which local health work is well advanced, as in England and Germany, dependence has been placed largely on duly constituted agencies, and respect for the enforcement of law encouraged If these agencies in our country had been given equal public support to enable them to discharge their full duty, many of the additional functions and facilities would have been provided long ago Too often with us reorganization of a health department has simply meant some unessential revision in the laws in order that a change of personnel might follow a change of political parties in such manner as not to offend the sensibilities of the public

ADEQUATE APPROPRIATIONS AND PERSONNEL

The absolute essential for the conduct of public health work, however, is adequate appropriations An examination of the laws will show in many instances that ample authority has already been provided, in fact, one is led to suspect sometimes that it is ample simply because at the time the law was enacted it was known that funds for its enforcement would not also be provided Some very good state health laws might be cited as impossible of enforcement purely by reason of lack of adequate appropriations

Fox states that not less than 2 per cent of the total revenues of a state should be set aside for health work, and has made the same estimate in the case of counties Only one state in the Union approximates this arbitrary standard Had they all done so, the most powerful factor in the solution of the problem of public health organization would have been provided This amount of appropriation should be attained, however, by gradual annual increases, as assurance is had that the funds are being well spent and that adequate results in disease prevention are being secured

The percentage estimated above for states would not apply in the case of cities, as their expenditures are based on somewhat different requirements, but

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* Read at the joint session of the Council on Health and Public Instruction of the American Medical Association and the Federation of State Medical Boards Chicago Feb. 8 1916 abstract of discussion Society Proceedings THE JOURNAL A M A. Feb 26 1916 p 685

whatever the requirements, funds should be provided to meet them.

In determining these requirements and the amount to be used for each object, it is necessary to have in mind the amount of disease to be overcome, the economic loss occasioned thereby, and the practicability of prevention. Since in health work, increases of appropriations will depend largely on recognition of the value of these results, an exact system of accounting should be adopted, by means of which, so far as possible, tangible results may be expressed mathematically.

In order that appropriations may be wisely used, an adequate personnel is also essential. In my judgment, properly trained, full time health officers are the sine qua non of present day health development. This applies especially to political units in rural communities. As said elsewhere, in this respect our progress is unsatisfactory as compared with that of England, for instance, where the majority of towns or counties have medical officers of health, who hold diplomas of public health and possess a knowledge of sanitary matters not required of the practicing physician.

ENCOURAGEMENT OF LOCAL AUTONOMY

By reason of priority of establishment of local health boards in the United States and the large measure of independence which they enjoy, these should be the best developed agencies we have for the prevention of disease. As previously stated, the policy of both the federal and state governments has been to encourage local autonomy in public health matters. The first federal sanitary law, enacted May 27, 1796, provided for cooperation of revenue officers with states and municipalities in their measures of prevention. Likewise, in Massachusetts, for instance, in 1797, the first state law was enacted for the establishment of local boards of health, empowering them to "make regulations . . . for the public health and safety respecting nuisances, sources of filth, and causes of sickness." This phraseology was later copied by many states before acts were adopted by them providing for centralized state health agencies.

This policy of local autonomy in public health matters continues, and should continue so far as consistent with public safety, having in mind, however, the fact that there are situations affecting more than one community that each community alone cannot handle. Such situations should be met by laws having statewide application in conformity with the principle upheld by judicial decisions that "it is primarily necessary that there should be one central authority (within a state) clothed with the power of affording equal protection to all."[1]

NECESSITY OF COOPERATION OF HEALTH AGENCIES

These local units should be correlated, however, and brought into cooperation with the state and national agencies, for under our form of government, health administration must of necessity be of a threefold character — federal, state and local — and the responsibilities and duties of each must be well defined and respected.

As is well known, the jurisdiction of the federal government in public health matters extends only over foreign intercourse, interstate intercourse, federal territory and federal administrative affairs. Under the constitution, it cannot usurp the functions of the states. In fact, in accordance with its long established policy of cooperating with state and municipal authorities, the federal government has relied largely on these authorities for the prevention of the spread of disease from one state or territory to another.

Under the act of Feb. 15, 1893, the secretary of the treasury is authorized to cooperate with state and local authorities. He may also issue regulations for the prevention of the spread of contagious and infectious diseases from one state to another when the regulations of the states are inadequate. These federal regulations, however, may be enforced by state and local authorities, but should they fail or refuse to do so, the president may adopt such measures as in his judgment shall be necessary.

Having reserved to themselves the police powers in respect to sanitation within their borders, the states have likewise the right, if they choose to exercise it, to take cognizance of matters affecting more than one community. Many of these powers in local affairs have been delegated, however, to local communities, and in consequence, the states affected have not that supervision over local health administration which is desirable and necessary to bring about uniformity and efficiency in the interest of the state as a whole.

In order to insure the greatest good to the greatest number and to meet changed conditions, I believe it will be necessary for all states to exercise the right of central supervision in greater degree over local health matters, notwithstanding some of their powers in this respect have apparently been previously relinquished to local authorities, for the principle has been definitely established by interpretation of law that "the state is still the sovereign, and may extend, limit, or revoke these powers (delegated) at will."[1] In other words, as in the case of the federal government, state governments should be in position when necessary not only to prescribe measures in the interest of more than one community, but to enforce them if the local authorities fail or refuse to do so. This principle is now embodied in the laws of at least twenty states, although the means to its enforcement may not likewise have been provided.

In addition to the regulatory powers referred to above, there should of course be no question as to the right of both federal and state governments to engage in public health investigations and dissemination of information thus acquired on the principle that the protection of health is, after all, largely a question of education.

DEFINITENESS OF THE POWERS AND DUTIES OF HEALTH ORGANIZATIONS

In all jurisdictions, the powers and duties of health organizations should be clearly defined and relate strictly to the protection of the public health. Furthermore, they should be distinct organizations and not combined with those having to do with charities and corrections and other welfare functions which are just as definite as health functions, but sometimes confused with them. The business of health organizations is primarily the reduction of morbidity and mortality. They should accordingly be looked to to carry out measures devised for this purpose, but should not have imposed on them all sorts of functions having only a most indirect health bearing.

The regulation of the practice of medicine and other vocations, for instance, should not ordinarily devolve on state health organizations. In some states this has undoubtedly interfered with the proper development of health work. In Illinois, Grubbs has estimated that in the past 75 per cent. of the time of the secretary of the state board of health, and 80 per cent. of the time of the board, has been occupied in enforcing the medical practice act.[2] In West Virginia, also, in the past, this work has largely concerned the state board of health almost to the exclusion of other duties.[3]

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[1] State Board of Health v. City of Greenville, Ohio, Sup. Ct., April, 1912.

Purely public health activities, such as the control of tuberculosis, school hygiene, industrial hygiene and sanitation of milk supplies, on the other hand, should devolve on the duly constituted health authorities and not be scattered promiscuously through various departments of government. In the recent past, the tendency has been to impose these duties on other than health agencies. In the state of Washington, for instance, hotel inspection for sanitary purposes is carried on independently of the state health organization. In *Minnesota*, this applies to the control of the sanitation of places of employment. In West Virginia, in 1914 this applied also to inspections of factories, hotels and schools, investigations of water supplies, and even to the enforcement of compulsory vaccination. Not much could be expected of the commissioner of health in the control of smallpox when the enforcement of this last most important function devolved under law on the county courts.

Not only should powers and duties be fixed by law, but it would be well if there were an interdepartmental or interdivisional committee with absolute authority to prevent assumption of the functions of one department, bureau or division by another and to prevent duplication. Theoretically, this power may be exercised by the official family of the chief executive in most governments, but practically it is often not done, and a mere segregation of functions by legal enactment will not accomplish the purpose, for they will not stay segregated by reason of the general character of organic statutes and the well meaning if misdirected ambitions of executive officials.

A SINGLE EXECUTIVE

It will be seen from the foregoing that if men and money are provided for health work as a result of an awakened public opinion, abundant opportunity will be presented to obtain results, and the development of a suitable public health organization will be stimulated. This evolution should begin with whatever is good of the organization already established. If it is incomplete, functions and funds should be provided to remedy the defect.

Public health organization in the United States being as yet in a developmental stage, it is possibly too soon to prescribe model laws for all states and towns. There is perhaps advantage in having different forms of organizations working side by side, the one being a control over the other as to efficiency.

Whenever reorganization is contemplated, however, I believe it would be well to vest in a single executive sole responsibility for all administrative matters, and hold him liable for inefficiency. This principle is followed in selecting the president of the republic, the governor of a state or the general of an army, and is a recognition of the fact that what is everybody's business is nobody's business.

While some state and local boards of health have undoubtedly demonstrated their efficiency, it must be admitted that they are more or less unwieldy, and there is a division of responsibility in executive matters particularly which should not exist. The improvement of sanitation and the prevention of disease require prompt action, and the authority to enforce necessary measures should be lodged with a competent official who can alone be held responsible.

Whether the title of the executive be "commissioner," "state health officer," "secretary," "superintendent of health," or "director general" is a secondary consideration; the essential is to lodge in him authority to take the initiative necessary to carry on preventive work at all times.

Boards of health with from ten to fifteen members are examples of undesirable diffusion of executive authority. By reason of their methods of work, they are on duty only at stated intervals. In all recent public health legislation, such as that enacted in Maryland, Massachusetts, New York and West Virginia, a state commissioner or health officer has been provided for, and in the majority of cases he is required to give his undivided time to his duties.

I would not discourage the providing of boards or commissions, but would confine their functions to the handling of quasilegislative and quasijudicial matters, and to acting as advisers to their respective health executives. In France, Germany and the United States such councils are available to the national health executives. In Massachusetts, New York, Pennsylvania and West Virginia, like councils are specifically provided for by law, and in some other states, the duties of boards of health are in fact restricted to these lines.

It goes without saying that membership of such boards should be selected wholly with reference to public spirit, knowledge of health matters, and willingness to serve at nominal compensation while in the actual discharge of duties. With such qualifications, they may be relied on for the performance of quasilegislative and judicial and advisory duties of a high order.

CONDUCTING OF DUTIES OF HEALTH ORGANIZATIONS THROUGH APPROPRIATE DIVISIONS

Executive health matters may be best conducted through a central office having appropriate divisions. The number of these divisions will necessarily depend on the size of organization and functions as fixed by law.

While there may be a difference of opinion as to whether a particular line of work, for instance, the inspection of plumbing, should be committed to health departments, there can be no doubt that all direct functions for the protection of health should be so committed, and grouped in such manner as will insure their receiving full attention.

As examples of the embodiment of this principle in recent legislation, the laws of Maryland, Massachusetts, New York and West Virginia may be cited. In Maryland, there is authority for five bureaus, namely, those of communicable diseases, bacteriology, chemistry, sanitary engineering and vital statistics. In the Massachusetts law the creation of divisions is left to the department of health, and in accordance with this authority seven divisions have been instituted, namely, those of administration, communicable diseases, hygiene, foods and drugs, sanitary engineering, water and sewage laboratory, antitoxin and Wassermann laboratories. In New York, nine divisions are specifically mentioned in the law, namely, those of administration, sanitary engineering, laboratories and research, communicable diseases, vital statistics, publicity and education, child hygiene, public health nursing and tuberculosis. In all these states the classifications of functions, so far as made, are practically the same.

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[2] Grubbs S B Public Health Administration in Illinois Pub Health Rep May 21 1915 p 1479

[3] Clark Taliaferro Public Health Administration in West Virginia Pub Health Rep Jan 22 1915 p 207

Such uniformity in the classification of work shows the importance and definiteness of this work, and emphasizes the necessity for the employment of full time division officers competent to develop it and to be responsible to their superior for results.

NECESSITY OF AN ADEQUATE FIELD FORCE

In order to carry on field work, a regularly organized personnel is also necessary. For the most part, this force, whether federal, state or local, should be mobile in character. Such mobility has been one of the largest factors contributing to the efficiency of the federal Public Health Service. In my judgment, it is a principle adaptable also for state and to a lesser degree local health agencies. It increases the efficiency of individual officers, renders them available to meet emergencies in different localities, and indirectly makes for true promotion.

In order to stimulate development of health agencies and facilitate cooperation, I have felt that it would be desirable for local health officers in specified field positions to act also in the capacity of federal and state officers and be clothed with both federal and state authority. Since full time local health officers are the most important need of the present, it might be well for the time being for the state and federal governments to join with local authorities in providing these officers in local jurisdictions, provided a due proportion of the expense was borne by those jurisdictions, and there is precedent for this apparently new idea, since it has been recently embodied in law to stimulate agriculture. In other words, authority has been granted for the appointment by the federal government of full time farm demonstrators, the county to pay one half. A like provision in respect to full time health officers would have far-reaching effects. Substantially it is now in operation in England, since under certain conditions a portion of the compensation of local health officers is paid by the crown. Largely by reason of this provision, local health administration in that country is regarded as far advanced.

In order that the several states may provide adequate field forces, a number of plans, some of them already in operation, suggest themselves: 1. Depend on county and municipal health officers. 2. Divide the state into districts and appoint health officers to have charge of them under the state health agency, and to cooperate with local health authorities. 3. Provide for districts of a single county or by two or more counties joining together, each district to be in charge of a full time health officer, clothed with full authority of the state and county, be appointed by the county on recommendation of the state health agency as to qualifications, and be amenable to this agency for efficiency.

The first plan is now in operation in many states, the county or township being the unit. As if the county were not a small enough unit, some laws specifically provide that its health provisions shall not supersede or in any way interfere with those municipal health boards within its borders. It would seem that the county and the municipalities within its jurisdiction should pool their interests, and be obliged to do so where this will enable them to join in securing the services of a full time health officer.

The second plan referred to above is now in operation in Maryland, Massachusetts, New York and Pennsylvania. Under its provisions the state is divided into sanitary districts, and a representative of the state board of health has immediate charge of each district, the expense being borne by the state. His duties are to devote all his time to his work, study disease prevalence, make reports to the state board, cooperate with local health authorities, and endeavor to bring about uniformity among them.

The third plan is a modification of the second. Under its provisions the state would be divided into an appropriate number of sanitary districts, consisting of one or more counties. A district board of health would be formed and composed of one representative each from the county or counties and municipalities within their borders. Each board thus constituted would appoint a full time health officer, whose qualifications would be determined by an examining board designated by the state and independent of the appointing board.

The last mentioned plan has been suggested for Kansas by a commission on public health appointed by the governor, and under the conditions prevailing in that state it would have some decided advantages. In West Virginia authority now exists for two or more counties to join in the employment of trained health officers and other agents and in the installation of a common laboratory, and the state is obligated to appropriate a sum equal to two fifths of the total amount contributed by the counties joining together in support of health work provided the qualifications of persons so appointed are approved by the public health council.

Theoretically, the appointment of full time health officers by local authority on qualifications determined by the state health agency, and their removal by this agency only for cause, would appear logical. Practically, however, the assumption of this power, in many states at least, would be contrary to public opinion and actual practice. The plan of districting the states is, on the whole, therefore, found to be the most practical one, and consequently coming more and more into favor. In the event that the federal and state governments should join in providing full time local health officers, it is probable the duties of these district officers might be merged and become those of the local officers so appointed.

DEPENDENCE OF TENURE OF OFFICE OF HEALTH OFFICERS ON EFFICIENCY

Regardless of the source of authority, whether federal, state or local, appointments of health officers must depend wholly on professional qualifications and tenure of office be based on efficiency if the best results are to be expected. Purely political considerations should have no part in the making of appointments of public servants of this character. Furthermore, such servants should be prohibited by law from engaging in other than their regular official duties. If these duties and the funds available in a particular political unit are not sufficient to justify the services of a full time officer, two or more units should be authorized, and in fact compelled by state law, to unite in the employment of such an officer. His services are surely as important as are those of county sheriff or attorney

By such provisions, public health organization will grow and become more attractive as a field for physicians, who will be justified and encouraged in taking special courses in preventive medicine to fit them to enter this field Moreover, universities will be compelled to perfect such courses, and public health will become more and more a paying investment on the part of the public and those engaged in it

OPPORTUNITY OF THE MEDICAL PROFESSION IN THE DEVELOPMENT OF PUBLIC HEALTH ORGANIZATION

Finally, it cannot be too often emphasized that men and money are the first essentials for the reduction of sickness and death rates As a result of supplying these essentials, better health organization will naturally follow

In any event, the great body of physicians owes a duty to society in public health matters They have it within their power to compel wise legislation, to standardize efficiency, and to keep health administration out of politics They must enter the field of public health work in greater degree, and cooperate with and support health officers more fully, if the medical profession is to keep pace with changing conditions and to do its part toward advancement of health work and health organization

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HAY-FEVER ITS CAUSE AND PREVENTION

WILLIAM SCHEPPEGRELL, A M, M D
President, American Hay Fever Prevention Association
NEW ORLEANS

From the standpoint of the number of patients affected, hay-fever ranks among the first of the nonfatal diseases While accurate statistics regarding the number of patients are not available, a conservative estimate has placed the number of persons in New Orleans affected with hay-fever at not less than 3,500, or 1 per cent of the total population Hay-fever is prevalent in the greater portion of the United States, and the proportion in New Orleans is a fair average of its prevalence in other sections The total number of those suffering from this disease is, therefore, so large that the subject demands the most careful consideration

Hay-fever is far more prevalent in the United States than in Europe In the former, the autumnal hay-fever is much more common, while in Europe the spring form is the prevailing type

SYMPTOMS

The symptoms of hay-fever in the early stage resemble those of an incipient coryza, for which it is frequently mistaken It is attended with sneezing, blocking of the nostrils due to the swollen mucous membrane, serous discharge and, in the early stage, slight elevation of temperature, with a tendency to subnormal temperature later There is itching of the inner canthi of the eyes and of the roof of the mouth in the region of the soft palate The difficulty of nasal breathing, which is usually present, is worse when the patient is in the horizontal position, and less when exercising Unlike an ordinary coryza, however, the discharge remains thin and serous and becomes mucopurulent only toward the termination of the attack

There is usually considerable general depression, which is associated with the subnormal temperature and the discomfort of breathing The mouth and pharynx become dry from the impeded nasal breathing, and add to the discomfort Many of these cases are complicated with asthma, which increases the suffering of the patient

Relief is experienced when the supply of pollen from any cause is diminished or disappears, as on a sea voyage A continued rain gives relief, and an absence of wind, or one blowing the pollen away from the patient, gives temporary relief In the vicinity of New Orleans, there is a large area of ragweed (*Ambrosia trifida*) located north of a certain residential section A wind from this direction in September causes a marked aggravation of hay-fever in this section, which, until recently, was attributed to the north wind The causative relation of the ragweed was conclusively demonstrated, however, by exposing a number of these patients to the opposite side of the ragweed area during the prevalence of a south wind, when they promptly reacted to the pollen

DIAGNOSIS

In spite of the greater increase in medical knowledge, many cases of hay-fever are still mistaken for ordinary colds The symptoms described above and their recurrence at certain periods of the year should simplify the diagnosis In doubtful cases, this may be confirmed by testing the patient with a small amount of pollen

Some of the staminate flowers of the suspected plants are placed in a small sterile gauze bag, and this gently sniffed by the patient In susceptible subjects, this is quickly followed by a slight reaction The patient may also be tested by approaching the suspected weeds so that some of the pollen is inhaled in this way

In the majority of cases, however, these tests are unnecessary and should ordinarily be avoided on account of the danger of developing a latent pollinosis The beginning and end of the attacks are usually found to be coincident with the pollinating period of certain plants with wind borne pollen, which, with the symptoms described above, is sufficient to confirm the diagnosis

Some physicians still believe that hay-fever is a local manifestation of some constitutional condition, in spite of the fact that the majority of patients, with similar conditions, have no such manifestations, and that when the pollen is not present, as on a sea trip, they do not occur Improved education in the etiology of this disease, and more careful observation, will gradually correct this error

ETIOLOGY

The development of hay-fever about the time that hay was harvested led to the belief that this was the cause of this disease, but it was not until about 1870 that the relationship of pollen was established

The particular pollens causing this disease were for a long time unidentified As an illustration of this, when patients developed an attack in the neighborhoods of weeds, the conspicuous goldenrod was at once suspected, and the ragweed with its insignificant green flowers unobserved While many plants have wind-borne pollen, this also varies to a marked degree In the case of the goldenrod, for instance, the pollen is not abundant and is dislodged with difficulty While the pollen is toxic to susceptible patients, and will develop a reaction if applied to the nostrils, it is carried by the wind to a very slight degree P L Ricker, of our Research Department, and assistant botanist of the United States Department of Agriculture, in reporting to our association, states his observations that bees are abundant on the goldenrod, and that it should be classified among the entomophilous (insect fertilized plants and not the anemophilous (wind fertilized) like the ragweed, on which these insects are never found In spite of the fact, therefore, that the goldenrod is considered an important factor in hay-fever in most reports and textbooks, it is responsible in only a small percentage of cases

The plants which form the type of hay-fever-producing weeds are the common ragweed (*Ambrosia artemisiaefolia*) and the giant ragweed (*Ambrosia trifida*) In the former, the pollen is not only wind-borne, but is produced in such abundance that a slight blow will dislodge it in clouds, and is so light that the wind will easily carry it to a considerable distance Under favorable climatic and soil conditions, this weed is found in every neglected field, on roadsides and even in vacant lots in the cities In more moist lands, however, the giant ragweed (*Ambrosia trifida*) takes the place of the artemisiaefolia and is found in similar profusion These two varieties of ragweed have been found to be responsible by our research department for about 85 per cent of all cases of autumnal hay-fever in the sections in which these weeds are prevalent (see the Ambrosias) As the autumnal hay-fever forms the large majority of hay-fever cases in the United States, the importance of a careful study of the Ambrosias is clearly indicated

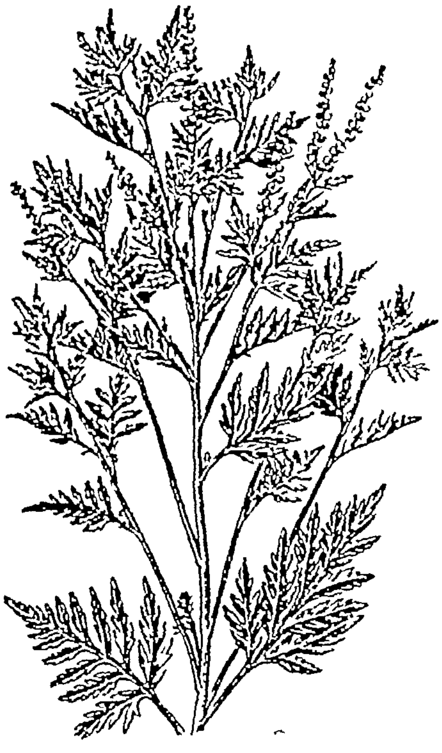
Fig 1—Wormwood ragweed

THE AMBROSIAS

The common variety (Fig 1) is called "artemisiaefolia" on account of its leaves resembling those of the wormwood (Artemisia) It is an annual with leaves much cut and thin, opposite and alternate, as shown in the illustration It has spikes of green flowers (staminate) at the end of the branches The pistillate or fertile flowers are at the intersection of the branches with the stalks It is especially found in fields where a crop of wheat, rye or oats has been harvested in early summer and afterward neglected It grows from 1 to 5 feet in height

It is a native of America and is found in dry soil from Nova Scotia to Florida and west to British Columbia and Mexico It is comparatively rare and local west of Kansas, and is then replaced by *Ambrosia psilostachya, Gaertneria acanthocarpa* and *Iva axillaris,* all of which are anemophilous

The great ragweed (Fig 2) is called "trifida" on account of its large three-lobed leaves It is the tallest member of the composite group, and frequently grows to a height of 12 feet It has a stout stem with a frostlike pith The insignificant greenish flowers form a terminal pointed cluster, which are staminate (male) The pistillate flowers, like the common variety, are located near the stalk It is common in moist soil from Quebec to Florida, and west to Nebraska, Colorado and New Mexico In the moist land near the Gulf Coast, it forms about 90 per cent of all the ragweeds, while in the drier interior section of the country, the reverse is the case

The irritating principle of both ragweeds is the pollen, which is formed in the staminate flowers, being yellowish, and almost as light as smoke It is so abundant that during the stage of pollination it will stain one's clothes yellow while one is passing through such a field, and is so light that it is almost impossible to collect any amount of it without its being blown away

Instead of the pollen of the ragweed being used directly for fertilization through the agency of insects, as is the case with entomophilous plants, nature has created an immense amount of pollen so that it can be carried by the wind to the distant pistillate flowers for fertilization and cross-fertilization The pollen is so abundant that when dislodged it is called "smoking" by many farmers The seeds are about 1/20 inch in diameter and are formed in the pistillate flowers They are solid and are not easily carried with the wind Were the seed wind-blown like those of the thistles, eradication would be much more difficult

POLLINOSIS

In cases of autumn hay-fever, if the patient is brought near these weeds while pollinating, so that the wind-borne pollen may reach his nostrils, he will react, the length of time depending on the amount of pollen inhaled and his resistance to pollinosis This reaction has been demonstrated in numerous cases in New Orleans during the month of September by the research department of the American Hay-Fever-Prevention Association

For the past seven years I have kept on hand the pollen-containing staminate flowers of the ragweeds for testing patients in the diagnosis of fall hay-fever In susceptible patients, typical reactions can be induced by inhaling the pollen *at any season of the year* The positive relationship of pollen to hay-fever is in this way absolutely confirmed

The relationship of the ragweeds to fall hay-fever, in which the development of the disease, its duration and conclusions are synchronous with the pollinating period of these weeds, has been clearly established A more difficult proposition, however, is the identification of other plants which are responsible for the remaining forms of hay-fever These, while less frequent than the autumn form, are important, not only because they represent in the aggregate a considerable number, but also because they are frequently of longer duration While the majority of patients have a pollinosis for the ragweeds only, many react to a number of plants, each of which prolongs the attacks

In Table 1 is a list of the ten most common hay-fever weeds in the Southern states As in other hay-fever weeds, their chief characteristics are as follows They are wind-pollinated, very numerous, the flowers are inconspicuous, with no bright color or scent (these being intended to attract insects in entomophilous plants), and the pollen is formed in great quantities The time of pollinating is given and, as will be noted, this list is sufficient to explain cases of pollinosis for every month of the year

TABLE 1—HAY FEVER WEEDS, ARRANGED ACCORDING TO TIME OF BLOOMING

1	Parthenium hysterophorus (bastard feverfew)	January to January
2	Rumex obtusifolius (dock)	March to July
3	Plantago lanceolata (plantain)	April to May
4	Phalaris intermedia (canary grass)	April to October
5	Amaranthus spinosus (careless weed)	April to December
6	Sorghum halepense (Johnson grass)	May to December
7	Xanthium strumarium (cocklebur)	June to December
8.	Ambrosia trifida (giant ragweed)	August to November
9	Ambrosia artemisiaefolia (common ragweed)	August to November
10	Iva ciliata (marsh elder)	August to November

Laboratory investigations have shown that a large variety of pollens may develop the reaction of hay-fever when applied to the nostrils While this is interesting from an experimental standpoint, it bears no great importance on the real etiology of pollinosis This is dependent on the existence and proximity of plants whose pollen are not only *toxic* when inhaled but which are *wind-borne* so that the pollen may be carried for some distance and be inhaled by the patient under natural conditions, and only such will be classified in our list of hay-fever-producing plants

INFLUENCE OF ALTITUDE

In spite of the popular belief that altitude has considerable influence in hay-fever, this is not in accordance with the facts except to the extent that at altitudes over 6,000 feet hay-fever-producing weeds are uncommon At an elevation of from 2,000 to 4,000 feet, for instance, along the Allegheny Range in North Carolina, Tennessee and Virginia, the common ragweed (*Ambrosia artemisiaefolia*) is very common, and hay-fever correspondingly frequent

PREDISPOSITION

With the development of bacteriology, hay-fever was also supposed to be of microbic origin and infectious The more recent and accurate investigations on this subject have entirely disproved this belief

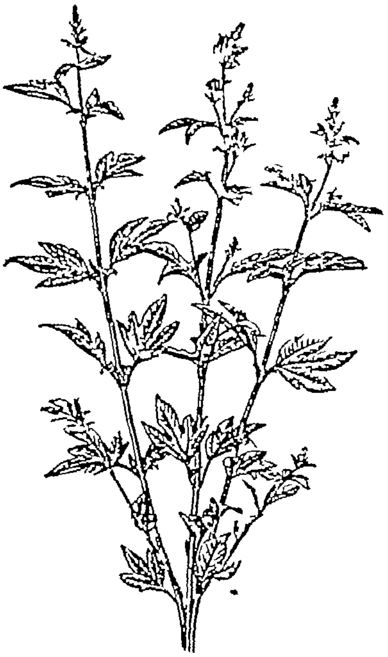
Fig 2 —Great ragweed.

The majority of textbooks state that there is present in hay-fever patients some neuropathic condition which makes them susceptible to pollinosis While patients during an attack of hay-fever are usually nervous, partly owing to the constitutional effect of the disease and partly to the prolonged annoyance and irritation, an impartial study of all available cases fails to corroborate this

The statement that persons of superior education and with the higher nervous temperament incident to modern life are more liable to hay-fever is also a subject for further investigation The fact that persons living in the country are not so frequently subject to hay-fever is undoubtedly true, but the probable explanation is that the continued exposure, perhaps for generations, has eventually developed a higher resistance which reduces this susceptibility to pollinosis A statistical report of hay-fever cases with regard to occupation, and also its relative frequency in the sexes, is under preparation by our research department

The popular doctrine of a special predisposition for hay-fever which produces susceptibility in some persons needs revising In the first place, this predisposition varies with different individuals In the tests made by our research department, it was found that some patients reacted to exposure in two minutes, while in others the reaction did not develop for from five to thirty minutes, and even as late as two or three hours In some cases there was only a transient irritation of the eyes and of the mucous membrane, and in others this was severe and lasted from one to forty-eight hours Not only were these tests made in the laboratory, but also the exposures were made under natural conditions in localities infested with the hay-fever-producing weeds

It would appear, therefore, that there is a wide difference in the degree of susceptibility of different individuals to the pollen The question is, What are the limits of this susceptibility?

A logical explanation is that the pollen of certain plants contains a toxin to which all are susceptible, but that its effects are more or less inhibited by the individual resistance An attack would, therefore, develop only when the exposure overcomes the resistance of the subject and only to this extent

As an illustration that even great normal resistance may be overcome by a still greater exposure, the following cases which occurred last September at Hendersonville, in the mountain region of Western North Carolina (elevation 2,350 feet) are instructive The natives of this section are rarely subject to hay-fever, in fact, the general opinion is that they are immune Two farm laborers, aged 43 and 35, respectively, were stripping corn for fodder Adjoining the field and to windward was a large quantity of ragweed (*Ambrosia artemisiaefolia*), the pollen of which blew like dust over the field so that the corn was stained yellow The same evening both men developed typical attacks of hay-fever with marked symptoms lasting forty-eight hours

Here were two persons with so high a resistance that, until the age of 43 and 35, respectively they were considered immune, but developed typical attacks of hay-fever after extraordinary exposure

When the attack has once been developed, clinical experience shows that the susceptibility of the patient is increased, indicating that the resistance has been lowered The apparent resemblance of this to anaphylaxis is apparent and will be investigated further

CAUSE OF REACTION

The manner in which pollen excites reaction forms an interesting subject of investigation That this effect is mechanical is untenable, as a large percentage of hay-fever patients, except when under the influence of pollinosis, will inhale dust without greater discomfort than other persons, and others with extremely sensitive nostrils have not developed pollinosis Many pollens with prickly coatings fail to produce irritation, while the pollen of the ragweed is without spikes but develops marked reaction

It has also been asserted that the pollen, under the influence of nasal secretion, germinates and sends out its pollen germ tubes, thus producing the irritation This germination takes place, however, only in the presence of sugar, which is absent in the nasal secretion, and is inhibited by sodium chlorid, which is present The analysis of this secretion is given in Table 2

TABLE 2—COMPOSITION OF THE NASAL SECRETION[1]

Water	993 00
Mucosin	53 30
Sodium lactate	1 01
Organic crystalline principles	2 00
Sodium and potassium chlorid	5 60
Phosphates	3 50
Sodium phosphate and carbonate	0 90

It has been found, moreover, that the process of germination usually requires about two hours, while the local reaction of hay-fever may take place in a few minutes

In a solution containing the salts found in the nasal secretion, many pollens quickly burst and distribute their contents Other pollens can resist the action of this solution, which explains their failure to produce reactions This subject is still under investigation by our research department

In considering the cause of hay-fever, therefore, we can first limit our attention to the pollens which are wind-borne Of these, only such are toxic which fail to resist the action of the nasal secretion The degree of resistance will influence the length of the interval between the exposure and the resulting reaction The absorbed toxin will produce a reaction and constitutional disturbances in the inverse ratio of the patient's resistance

REACTIONS FROM THE PRESENCE OF ANIMALS

The susceptibility of persons to the presence of cats, horses and other animals should be distinguished from true pollinosis Many of these cases are psychic in character, but when actual reaction takes place, it is probably due to the skin emanations of such animals As the prophylaxis in such cases is self-evident, and the cases do not come under the classification of hay-fever, they will not be further considered in this connection

FAILURE OF TREATMENT

A careful study of medical literature indicates very clearly that the treatment of hay-fever, except as far as temporary alleviation of the symptoms is concerned, has not been a credit to the medical profession Pollantin, which was heralded as a cure some years ago, has been successful in my hands in so few cases that I have long since discontinued to recommend it, and this has appeared to be the general opinion of the medical profession

The treatment by gradual immunization with the specific pollen inhalation before the season of the usual attack, which I introduced in 1908, proved successful in a considerable number of cases, but the effects were not prolonged over a single season, and, as the majority of patients feared to prolong their hay-fever attack without the assurance of permanent relief, and promises to the contrary could not be conscientiously given, it was gradually discontinued

Serum and vaccine therapy have been advocated in hay-fever as in the majority of other diseases, but the general results have been unsatisfactory, and the majority of patients decline this severe treatment without a reasonable guarantee of permanent benefit

The removal of the patient from the irritating pollens by sea voyages, altitudes and climates where the offending weeds are not found gives temporary relief, but is available to only a few

The majority of hay-fever patients present no unusual abnormal intranasal condition except during the attack, and operations for nasal obstruction, unless indicated for other reasons, have been successful in comparatively few cases and are, therefore, rarely advisable

PREVENTION

Even had therapeutic measures been more successful, prophylaxis, based on the removal of the exciting cause, should have been advocated as in malarial and typhoid fevers, tuberculosis and other diseases of known cause Hay-fever, however, has been the stepchild of preventive medicine, and until recently no organized efforts in this direction have been undertaken

In view of the great and increasing number of hay-fever patients, their prolonged distress, the unsuccessful results of all curative measures and the distinctive preventable character of the disease, the American Hay-Fever-Prevention Association has undertaken a campaign of education, to be followed in due time by suitable legislation, for the prevention of hay-fever

In the educational part of this work, the first consideration is the correct diagnosis of hay-fever and the acceptance of the fact that all cases of true hay-fever are the results of pollen inhalation

The identification of the various weeds and plants that may develop hay-fever is of the utmost importance, but will gradually follow the establishing of the etiology of pollinosis As these principles become better understood, the physician, when consulted by a patient with hay-fever, instead of limiting his attention to writing a prescription or injecting a vaccine, will investigate the presence of hay-fever-producing weeds in the neighborhood of the patient's residence or vocation In many cases, the eradication or even the cutting of such weeds produces immediate results

In one of my patients, the offending weed (*Ambrosia artemisiaefolia*) was growing in his garden In another, a schoolteacher, affected with hay-fever for many years, on being questioned stated that there was an abundance of flowering weeds in the vacant lots adjoining her house When specimens of these weeds were produced, they were found to be the *Parthenium hysterophorus*, one of the causes of hay-fever in South Louisiana In both of these cases, marked relief soon followed the cutting of these weeds In order to obtain complete relief in such cases, however, the cutting of the weeds should be over a considerable adjoining area, as the pollen is wind-borne to a distance depending on the velocity of the wind

While the removal of the offending weed is the correct measure, relief may also be obtained, when this is impracticable, by avoiding the proximity of weeds known to be toxic to the patients In many cases this is entirely practicable, as shown in the following case in which the attack was postponed for thirty-three days

E G, manager of a sugar plantation near New Orleans, has been a sufferer from hay-fever for the past ten years, the attacks always commencing about August 25 After the influence of the ragweed to this form of hay-fever had been explained to him, he concluded that his attacks were due to the pollen of the trifida ragweed which grows on a road some distance from his residence He therefore avoided the road, and until September 28 for the first time in ten years, he had had no attack On this date, he found it necessary to pass this road In twenty minutes he commenced to sneeze, that night he had a violent attack, and the following day he had his usual annual hay-fever

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[1] Robin Leçons sur les hun irs, Paris

The treatment of cases by the eradication of the hay-fever-producing weeds will not only produce direct results, but will also prove a powerful impetus in educating the public in the relationship of such weeds to hay-fever It will result, moreover, in having these weeds considered from a new point of view Instead of simply indicating neglect or careless cultivation, they will be looked on as a source of disease and discomfort to a large class of sufferers This will not only bring the leverage of public opinion to the eradication of these weeds, but will eventually simplify the question of legislation

In connection with the question of public education, the American Hay-Fever-Prevention Association has received a communication from Dr Rupert Blue surgeon-general of the United States Public Health Service, and one of the honorary vice-presidents of our association, in which he summarizes this in a very concise manner

> It appears that the most practical method of securing the cooperation of the public would be by education as to the effect of the presence of these weeds in communities from both health and economic standpoints This seems to be the primary object of your association, which is to be commended for its efforts

SPRING HAY-FEVER

Some of the early forms of hay-fever are due to the pollen of the Graminaceae or grasses, which include the cultivated varieties, such as rye, wheat, corn, etc These form a common cause of hay-fever in England and the continent, where the autumnal form due to the ragweed is not found, owing to the absence of the weed

While this is of much less frequency than the fall hay-fever in the United States, it represents in the aggregate a considerable number When these cases are due to the cultivated varieties, the knowledge of this fact should induce the patient, whenever possible, to live away from such cultivated fields or at least to avoid them during the active season of pollination Only in those cases in which the removal of the offending plant is impossible will the question of treatment be given preference over prevention

ERADICATION OF HAY-FEVER-PRODUCING WEEDS

As the autumnal hay-fever is the most prevalent form in the United States, and, in the majority of cases, is due to ragweed, the American Hay-Fever-Prevention Association has given its first attention to the eradication of this weed The description and illustration of both varieties (*Ambrosia artemisiaefolia* and *trifida*) have been sent to the state boards of health of each state and of the District of Columbia Many of these have published the cuts and descriptions, and a number have sent them to the newspapers of their state for publication

The United States Department of Agriculture has assisted and is furnishing valuable information for this work Arrangements have been made with the Hygienic Laboratory of the Public Health Service at Washington to make investigations on the hay-fever pollens submitted by our research department Encouragement or promise of active cooperation has been offered by the majority of the state boards of health, these being as follows Arkansas, Alabama, Arizona, California, Colorado, Delaware, Florida, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, Nevada, New Hampshire, New Jersey New York, North Carolina, Oregon, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming

The common ragweed (*Ambrosia artemisiaefolia*), while found in great abundance, presents no special difficulty in eradication, as it is an annual and reproduced only by seed In carefully cultivated lands it is not found in appreciable quantities Where the land is not cultivated, this weed may be entirely kept down by grazing cattle When, however, it has been neglected, the weed should be mowed before the latter part of August, in order to prevent pollination

The giant ragweed (*Ambrosia trifida*), which grows in similar abundance in the moist lands of the coast, presents a more difficult problem, as the roots are perennial Until this weed is 2 feet in height, cattle will feed on it with avidity, which will probably prove useful in destroying it In carefully cultivated lands, it is rarely found The question of the best scientific method of eradication of both the ragweeds has been referred to the United States Department of Agriculture, and the results of this investigation will be reported later

ORGANIZED CAMPAIGN AGAINST HAY-FEVER-PRODUCING WEEDS

With a view of showing what can be accomplished by organized efforts in the prevention of hay-fever, the American Hay-Fever-Prevention Association has concentrated its first efforts in New Orleans in the following manner

The public was first educated regarding the ragweeds, so that they could be easily recognized Illustrations of the weeds were published in the *Bulletin* of the State Medical Board of Health and the public press, and the live weeds, in full development, were exhibited in a show-window of the principal street

The city of New Orleans, through the commissioner of public works placed at the disposal of the association twenty convicts, who cleared the streets and sidewalks of the outer sections of the city of the weeds, in accordance with a map prepared by the topographic committee of the association showing the areas infected with ragweed The city board of health assisted by enforcing the cutting of weeds in vacant lots and the commissioners of the various parks had the ragweed destroyed in the public parks under the direction of the association

Valuable assistance was given by the Women's Civic League, which appointed a special committee on vacant lots This committee made arrangements with labor bureaus so that it not only reported lots infected with weeds but offered to send workmen to cut them at low rates

The storm of September 29 destroyed practically all the leaves and flowers of the remaining giant ragweed in exposed places As a result of this, and the efforts of the American Hay-Fever-Prevention Association, fall hay-fever practically disappeared in New Orleans several weeks earlier than the usual time This campaign will be resumed next spring, when its management will be placed in the hands of the state hay-fever-prevention associations

The American Hay-Fever-Prevention Association believes that what has been effected in New Orleans can be done in all towns and cities In some of the smaller towns, especially those catering to summer visitors, this could be accomplished before next summer The statement that a town is free of hay-fever will prove an advertisement that will easily repay the cost of destroying the hay-fever-producing weeds

844 Audubon Building

POLLEN EXTRACTS AND VACCINES IN HAY-FEVER *

SOLOMON STROUSE, M D
AND
IRA FRANK, M D
CHICAGO

Therapeutic experiment presupposes a more skeptical point of view, more conservative judgment, and less enthusiasm for results than any other form of experiment in medicine To obtain results of value, one must not attempt to prove anything, especially when the proof will depend to a great extent on statistics In collecting statistics, some cases are thrown out from one series while similar cases are left in the control, and other errors creep in despite the most honest efforts of the investigator

The history of the treatment of hay-fever contains many variations Nose operations, thyroid extract, calcium, pollantin and bacterial vaccines have been lauded from time to time as sure cures The disease from its very nature lends itself to just such occurrences, perhaps in no disease are the sufferings so intense and prolonged and the final results so slight Patients are anxious to be cured, and are willing to try almost anything As a result of this feeling, sincere efforts of scientific investigators are prematurely pushed on the profession by commercial houses, and today Koessler's[1] prophecy of a year ago is already filled The results of scientific investigations and the promises of the commercial literature on specific therapy of hay-fever can hardly be said to correspond, scientifically speaking, the whole subject must still be considered in an experimental stage Therefore we have deemed it wise to present our studies at the present time, hoping that they will throw some light on the problem

Blackley[2] first established the etiologic rôle of pollen in hay-fever, and Dunbar[3] was the first to employ modern methods to the study of specific treatment It can be stated now without fear of contradiction that the pollen of various grasses and plants produces hay-fever It has not as yet been definitely proved that pollen is the sole etiologic agent The early rose-fever of this country, which is the common hay-fever of England, is caused in the main by the grasses, especially red top, timothy and blue grass The autumnal catarrh — by far the most common form in the United States — is caused by members of the *Compositae* family, mainly ragweed No better proof of the etiologic role of pollen in hay-fever need be asked for than the production of a typical attack in midwinter by injection of a dose of pollen extract in a susceptible person, or by the fact that a specific skin or eye reaction can be obtained at any time with such a person In normal persons this reaction is never obtained

Dunbar's conception of the pollen as a true toxin, and his attempts at passive immunization of the disease by a serum obtained from horses injected with increasingly large doses of pollen, are too well known to require further mention Following the work of Dunbar, the next most important development in the treatment of hay-fever was active immunization of the patient with extracts of pollen, the pioneers in this work being Noon,[4] Koessler and Clowes[5] Noon's work, as well as that of his successor, Freeman,[6] was along the regular line of therapeutic inoculations of Wright's laboratory Koessler's was supported by many laboratory experiments demonstrating that hay-fever is a pollen protein sensitization The similarity of the symptoms of hay-fever to the usual symptoms of anaphylaxis is now generally understood

The therapeutic effect of increasingly large injections of pollen extract has now been tested and reported by several workers, as seen in Table 1 We do not wish to draw conclusions from this table, but merely to show that as far as we have been able to gather there are 332 cases reported in the literature, of which 241 are available for the study of clinical results

TABLE 1—REPORTS IN THE LITERATURE

Author	Reference	Number of Cases	Cured	Greatly Relieved	Relieved	No Effect	Worse
Freeman	Lancet, London 1911, ii, 814 1914, i, 1178	84	24	30	22	8	
Lovell	Practitioner, London 1914 xcii, 266	10		3	2	5	
Lowdermilk	The Journal July 11 1914, p 141	19	16			3	
Manning	The Journal Feb 20, 1915, p 655	21		14	4	2	1
Goodale	Boston Med and Surg Jour, 1915 clxxiii, 42	(70*) 34		26		8	
Oppenheimer and Gottlieb	New York Med Jour 1915, ci, 229	11	1	8		2	
Ulrich	The Journal Apr 18 1914, p 1220	(12†)					
Ellern	Deutsch med Wchnschr, 1912, xxxviii 1590	13		6	5	2	
Koessler	Illinois Med Jour, 1914, xxvi, 120	41	4	29		8	
Clowes	Proc Soc Exper Biol and Med, 1913, x, 69, 70	8		8			
Available Total		241 332	45	124	33	38	1

* Tested by eye test
† Majority relieved

If they are classified merely as cured, relieved and negative, we find forty-five cured, 157 relieved and thirty-eight uninfluenced Most of Freeman's and Koessler's cured patients received injections for more than one year Lowdermilk's[7] results require special interpretation because he says bacterial vaccines were used in cases complicated with infection This will be discussed subsequently There has been no standard technic either in method of preparation of the extract or method of injection, so obviously no comparisons can be made between the results obtained by different workers

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* Read before the Chicago Society of Internal Medicine, Nov 22, 1915

* All the laboratory work done in connection with this study is from the Nelson Morris Institute for Medical Research of the Michael Reese Hospital

[1] Koessler Illinois Med Jour, 1914, xxvi, 120

[2] Blackley Experimental Researches on The Cause and Nature of Hay Fever, London, 1873

[3] Dunbar Deutsch med Wchnschr, Nov 13, 1911

[4] Noon Lancet, London, 1911, ii, 1572

[5] Clowes Proc Soc Exper Biol and Med, 1913 x, 69, 70

[6] Freeman Lancet, London, 1911, ii, 814, ibid, 1914, i, 1178

[7] Lowdermilk, R C Hay Fever, The Journal A M A, July 11, 1914, p 141

As far as these statistics prove anything, they show that, as used up to now, pollen extracts have the possibility of cure and have apparently relieved a majority of patients

From the time of Blackley and Dunbar, many so-called specific micro-organisms for hay-fever were discovered Today no one believes that bacteria cause hay-fever, but there is a certain amount of evidence that bacteria play a role in the disease Bacterial vaccines have been used in the therapy of the disease Morrey,[8] for instance, on the theory of "strengthening the nasal mucosa so that irritants, whatever they are, would be without effect," injected eight patients with autogenous nose vaccines and reported relief in all Freeman, although using pollen extract, stated that "it seems probable that an attack of hay fever may be the starting point of a bacterial infection, or a catarrh of the air passages may predispose to hay fever" As mentioned above, Lowdermilk, using bacterial vaccines "where infection existed," along with active immunization with pollen extract, reports the highest percentage of cures from pollen therapy The importance of his results cannot be determined because he does not mention what he considers infection, nor does he specify the cases in which vaccines were used Our own interest in this question was stimulated by the remarkable results obtained from autogenous nasal vaccines in a man for years a sufferer from rose-fever who, following a few intensive injections, was so completely free from symptoms as to be able to go to New York by rail

It is difficult to reconcile good results from bacterial vaccines in a disease the symptoms of which are so essentially the symptoms of a pollen protein sensitization On the other hand, if the disease is purely a pollen protein sensitization, one might expect better therapeutic results with active immunization against the pollen protein But there can be no logical objection to the assumption that even if pollen produces the disease, bacteria may play a secondary but important role in its unfolding

As Adami[9] and others have contended for some time, absence of suppuration or actual inflammation does not prove absence of infection, or, to use his term, "subinfection" In this state "bacteria do not multiply and set up foci of suppuration, they are destroyed, but with their destruction the liberation of their toxins causes a poisoning of the cells immediately around them, and the accumulative action of these toxins brings about the death of certain cells" In hay-fever may there not be a condition of subinfection in the nose, produced, perhaps, by the inhalation of pollen and prolonged by the pathologic stasis of an attack? This conception of dual etiologic factors is not without analogy in pathology As Adami has pointed out, Opie's[10] experiments on cirrhosis of the liver are illuminating Chloroform will destroy liver cells but will not produce cirrhosis, likewise sublethal doses of *Bacillus coli* will not produce cirrhosis, but the combination of the two together produces cirrhosis An example of protein sensitization associated with bacterial infection may be seen in a patient of ours who developed urticaria following the ingestion of any protein, which was definitely proved to be due to an intestinal infection, and which was cured permanently only when the intestinal infection was cured

The conception of hay-fever as a pollenosis associated with a bacterial subinfection can be expanded to explain the partial relief obtained by bacterial vaccines and by pollen extracts If the inhalation of pollen in a susceptible individual sets up a condition of nasal subinfection, then this infection of the nasal mucous membrane will allow the absorption of even more pollen Thus a vicious circle is established, the influence of specific therapy on which seems apparent Bacterial vaccines alone will relieve symptoms because less pollen enters the system, but will not cure because they cannot influence the condition of pollen protein sensitization On the other hand, the immunity produced by active immunization is not sufficient because the rate of its production cannot keep pace with the rate of absorption of pollen from the irritated mucous membranes Combined treatment with bacterial vaccines and pollen extract should be able to control both factors Possibly Lowdermilk's very high percentage of cures can be explained on this basis

Proof of such a conception practically is limited to therapeutic experiments We therefore planned a series of inoculations which were to be carried on for three years In the first year bacterial vaccines were to be tested, in the second pollen extracts, and in the third combined treatment Our patients were peculiarly adapted for such a procedure as most of them have been under observation for a number of years, and their behavior under varied conditions was fairly well known For reasons which will appear later, this course was interrupted this year Our results are reported now merely because they seem to support the theory expounded and seem to offer therapeutic promise

TREATMENT WITH BACTERIAL VACCINES

The results of bacterial vaccines will first be discussed All the autogenous vaccines were made from cultures on blood agar taken from within the nose In most instances a pure culture of *Staphylococcus albus* was obtained, and more rarely the pneumococcus and *Micrococcus catarrhalis* were found Thirteen patients were treated during the attack, five for early June fever, eight for autumnal fever Of the five treated for June fever, two received some relief, one was greatly relieved and two were for all practical purposes cured for the season One of these, however, whose symptoms pointed to both spring and autumnal pollenosis, had a complete relapse, August 17, and this was entirely uninfluenced by the bacterial injections

Of the eight patients with autumnal hay-fever, one was able to stay in the country and even ride in automobiles without disturbance, and although she had been a sufferer for years volunteered the information that "she had never had such a good summer" This patient is of particular interest in that she was continually comparing her "case" with that of friends receiving pollen extract, and she was of the opinion that she was better off than her friends Five had undoubtedly lighter attacks of shorter duration, and two had no relief Some of these patients have been subsequently treated and will be discussed in a short time It is only fair to say that before injections were started the patients were told that they would probably receive no benefit from them, but that the treatment would be harmless In fact, throughout this work we have adopted an attitude of extreme skepticism when discussing probable results with patients This attitude has been purposely adhered to in order to eliminate the psychic influence as far as possible

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[8] Morrey Charles B Vaccination with Mixed Cultures from the Nose in Hay Fever The Journal A M A Nov 15 1913 p 1806
[9] Adami Brit Med Jour 1914 i 177
[10] Opie Tr Ass n Am Phys. 1910 xxv 140

The results can be seen summarized in Table 2 "Cured" indicates that there was complete relief of all symptoms, "greatly relieved" means that some symptoms still remain, "relieved" means that some were relieved (either attacks were less frequent, less severe, or that the more severe symptoms, asthma, for instance, were absent), "no effect" signifies that there was no relief at all Broadly speaking, 64 per cent of the patients injected showed some signs of improvement, while 36 per cent were absolutely uninfluenced by treatment

TABLE 2—RESULTS OF TREATMENT WITH BACTERIAL VACCINE

Type	No of Cases*	Cured	Greatly Relieved	Relieved	No Effect
Spring	5	2	1	0	2
Autumnal	9	0	4	2	3
Percentages of total		14	36	14	36

* One case of combined spring and autumnal pollenosis is recorded twice

TREATMENT WITH POLLEN EXTRACT

Probably the best attempt to standardize pollen therapy has been made by Koessler, and in our work we followed his technic We were not in a position to use extracts of pollen of grasses, so no cases of the early fever were treated Quantitative eye tests for susceptibility were done in every case except five, in which treatment was started during the attack, but no attempt was made to control dosage by the results of the test during treatment This was decided on because most workers (Freeman, Koessler, Lowdermilk, Goodale,[11] and Ellern[12]) have found that the results of the quantitative eye or skin tests do not correspond with the actual immunity, any more than the measurement of agglutinins in typhoid serum is an index of actual resistance to the typhoid bacillus Furthermore, in order to obtain statistics comparable with our vaccine cases, it was necessary to rely on clinical results Since these are mainly subjective, they are necessarily open to wide interpretation We therefore marked the patients on the basis of their attacks in previous years, just as the results with bacterial vaccine treatment had been estimated, and no other possible factor was allowed to influence the mark This method, while necessarily not accurate, seemed to us the most logical for our purpose

TABLE 3—RESULTS OF POLLEN THERAPY*

	No of Cases	Cured	Greatly Relieved	Relieved	No Effect
Prophylactic	16	0	4	6	6
Phylactic	5	0	3	2	0

* In addition to this series treated with pollen extract of our own were two treated with Lederle's extract without results Through the courtesy of Dr Morgenthau, we are also allowed to report six cases treated by him with our extract, of which four showed no results, one patient was somewhat relieved, and one very markedly benefited

In our series were sixteen patients, treated prophylactically beginning in May, and five treated during the attack In seven a decided improvement over last year, and in eight a noticeable improvement is seen Five of these patients had been under treatment with bacterial vaccines previously, and a comparison of results is seen in Table 4

TABLE 4.—COMPARATIVE RESULTS IN FIVE CASES

Case Number	Bacterial Vaccines	Pollen
6	Greatly relieved	Relieved
7	Relieved	Relieved
9	Greatly relieved	Relieved
10	No effect	Relieved
12	Greatly relieved	Greatly relieved

In the early part of this summer hay-fever was very light, and for that reason we felt unable to estimate just what were our results The general impression of most of the patients was that, compared to patients not receiving pollen, they were having comparatively milder symptoms

During a hot spell in September, three of the patients, who up to then had been free from symptoms, had most severe attacks of hay-fever Autogenous vaccines were immediately made and intensively injected In these three patients, and a fourth in whom vaccine therapy in a previous year had been beneficial, most surprising results were obtained The three patients who had been having most intense attacks of hay-fever showed after the first injection an almost complete disappearance of symptoms The fourth patient, who was having only mild attacks at the time, also reacted with a disappearance of symptoms In all four the vaccines were continued until the end of the season, and in all the results were almost unbelievable and can hardly be called other than seasonal cures, as the patients had no subsequent attacks While these results might have been due to the previous inoculations of pollen extract, comparison with the other patients renders this interpretation improbable Three of these patients had received autogenous vaccines in previous years with some amelioration of symptoms

DISCUSSION OF RESULTS

As stated in the beginning, interpretation of therapeutic experiments is extremely difficult In our tables not a case was thrown out for any reason Perhaps the most conservative way of comparing results is in figures 64 per cent of the patients receiving vaccines and 70 per cent of those receiving pollen extract apparently had a milder season than previously Vaccine therapy seemed to give equal or better results than pollen extract in the individual cases The past year was an unusually favorable one for hay-fever subjects, but in no case was there a cure from the pollen extract Whether the amelioration of symptoms either year was due to the therapy cannot be determined The four patients receiving combined treatment were cured for the season, but the number treated is entirely too few to permit of any definite conclusions The theory on which combined specific therapy is based seems tenable, and the results so far obtained seem to support the theory, although it is of course possible that, in the light of newer interpretations of certain so-called specific reactions, some other explanation of our results may subsequently be offered Whether the method of prophylactic pollen therapy combined with phylactic vaccines is the proper one cannot be judged as yet The question is open and can be decided only by a larger experience than that reported here

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[11] Goodale Boston Med and Surg Jour, 1915, clxxiii 42

[12] Ellern Deutsch med Wchnschr, 1912, xxxviii, 1590

104 South Michigan Avenue

THE TREATMENT OF HAY-FEVER WITH CALCIUM SALT

WITH A REPORT OF TWENTY-SIX CASES

HAROLD WILSON, M D
DETROIT

The reports of Emmerich and Loew[1] on the very favorable results secured by them from the prolonged administration of calcium chlorid in the treatment of hay-fever induced me to make some trial of this drug during the season of 1915 A brief report of the results will be given in this communication

Whether the ingestion of calcium salts has a direct inhibitory action on the proteolytic reactions which appear to be a necessary part of the hay-fever complex, or so modify this reaction as to render the split proteins less toxic, or whether they act by lessening the patient's nerve irritability, seems at this time to be quite undetermined The employment of calcium salts in hay-fever would be on a much better basis if we were able to rationalize it At present, it seems to me that this method of treatment can hardly claim to be more than "reasonable empiricism" In view of the fact, however, that much other useful therapy rests on a no more secure foundation than this, there is no reason why we should not make a sufficient trial of this method, which has, certainly, many practical advantages

Twenty-six patients were treated by me during the past season Of these, twenty-two were treated exclusively with calcium chlorid, and four patients, who had been under treatment by means of injections of pollen solution, were given the drug when their hay-fever symptoms began to develop more or less severely

One patient had hay-fever of the vernal type only, three patients had both vernal and autumnal attacks, and twenty-two patients had only autumnal attacks Twenty-two patients gave a positive ophthalmic or cutaneous reaction to ragweed pollen, four gave a negative reaction to ragweed Many cutaneous tests were made with substances other than pollens, the result of which will be made the subject of another report

Treatment was begun in June, with seven patients, in July with four, in August with fifteen, and in September with two In no case did any patient take the drug for more than eight or ten weeks before the time of the expected attack, and in most cases the period was much more brief Emmerich and Loew advise the use of the drug over a very long period, as much as a year, if possible Although it has been shown that the maximum calcium retention in the system occurs only after its prolonged ingestion, it remains to be proved that its optimum therapeutic effect in hay-fever requires its daily use for a year before the expected attack In some of the most favorable cases here reported, the relief secured came almost at once, or after taking, at most, only a few doses

For most patients the calcium chlorid was prescribed thus

Calcium chlorid, crystals	100 gm
Distilled water to make	500 c c

M Sig Take one teaspoonful in sufficient water during or after each meal

This gives the patient about 3 gm of calcium chlorid daily The crystalline salt is used in preference to the anhydrous, as making a cleaner and clearer solution When the anhydrous salt is prescribed, allowance should be made for the water of crystallization, of which in the crystalline salt there are six molecules ($CaCl_2+6H_2O$)

Calcium chlorid, anhydrous	50 gm
Distilled water to make	500 c c

M Sig Take one teaspoonful in sufficient water with or after each meal

There was no serious difficulty in taking the drug as thus prescribed One patient experienced gastric distress until the dose was reduced, another complained of weakness and loss of appetite, and had to use it intermittently in a lessened dose, another thought it caused a diminution in the urinary output, while another thought the flow of urine was increased It has not been observed that the daily ingestion of 3 gm of calcium chlorid has been followed by any marked bodily disturbance In fact much larger doses than

RESULTS OF TREATMENT WITH CALCIUM CHLORID IN TWENTY SIX CASES *

Case No	Type of Hay Fever	Reaction to Rag weed	Duration of Treatment	Result	Remarks
12	A	+	2-3 weeks	+	Under treatment with injections of pollen solutions for ten weeks previously
13	A	+	2-3 weeks	+	Previous treatment as in Case 12
14	A	+	2-3 weeks	+	Previous treatment as in Case 12
19	A	+	2-3 weeks	+	Previous treatment with injections of pollen solutions seven weeks
22	A	+	10 weeks	0	
23	A V	—	13 weeks	+++	Immediate improvement and absolute freedom from all symptoms after July 28
24	A	+	11 weeks	+++	Multiple sensitization
25	A	+	18 weeks	+	No symptoms until September 1
26	A	+	16 weeks	+++	No symptoms until September 25 Then only trifling itching in throat and slight sneezing No other symptoms
27	A	+	12 weeks	—	September 25 patient writes 'I was worse than usual'
29	A	+	8 weeks	+++	Only slight symptoms
30	A	+	3 weeks	+	
31	A	+	9 weeks	+	Multiple sensitization (faint)
32	A	+	4 weeks	+	Multiple sensitization
33	V	—	9 weeks	++	Immediate relief and practical freedom from all symptoms about half the time
34	A V	+	6 weeks	+	Reports moderate relief from symptoms during season
35	A	+	4 weeks	+	Multiple sensitization
36	A	+			No report
37	A	+	6 weeks	++	Very little hay fever even in country
38	A	+	4 weeks	+	Multiple sensitization
39	A	+	4 weeks	+	
40	A	+	4 weeks	++	Multiple sensitization
41	A	+	4 weeks	++	Did not take drug regularly
42	A	—	6 weeks	+++	Peach reaction positive stopped eating peaches
43	A	+	2 weeks	+	Left city early in September
44	A V	—	13 weeks	+++	Relief immediate and complete slight recurrences took drug very irregularly

* Explanation of signs A indicates autumnal V vernal — symptoms worse than usual 0 symptoms about the same as usual + symptoms less marked than usual ++ symptoms much less marked than usual very definite improvement +++ absolute freedom from symptoms or only trifling and insignificant ones during season

this can apparently be taken with entire safety. Cow's milk contains 0.198 per cent. calcium monoxid. A pint of milk contains about 0.71 gm. calcium. Three gm. of calcium chlorid crystals contain about 0.55 gm. calcium, so that more lime is taken by the daily use of a pint of milk than in the dosage prescribed above.

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[1] Emmerich and Loew Erfolgreiche Behandlung des Heufiebers durch lange Zeit fortgesetzte Chlorkalziumzufuhr München med Wchnschr 1913 lx 2676 Weitere Mitteilungen über Erfolgreiche Behandlung des Heufiebers ibid, 1914 lxi 41

The accompanying table gives the results of the treatment with calcium chlorid in the twenty-six cases under observation.

REPORT OF CASES

A few of the most favorable reports are given in greater detail.

Case 23.—Miss M. T., aged 21, had had hay-fever since childhood, beginning in May and lasting until frost. She was sensitive to flowers of all kinds, to dust and to wind. She could not sweep floors without marked discomfort. She had no asthma. Eye and nasal symptoms were most marked. She had been using epinephrin solutions until they now aggravated the trouble. July 2, there were lacrimation, coryza and sneezing of moderate severity more or less continuously. Ophthalmic and cutaneous reactions to ragweed were negative. Calcium chlorid, 1 gm., three times a day, was prescribed. July 9, eyes were "wonderfully better"; there were somewhat less sneezing and coryza; the patient was less sensitive to dust and wind. July 20, she was much less uncomfortable than usual. On the whole, there was a *marked* amelioration of symptoms. July 28, there was very great relief. The patient was practically free from all symptoms. "I never was so helped by anything before." August 13, the patient reported that she had had no hay-fever symptoms whatever since last visit. Relief was absolute. September 6, absolute freedom from symptoms continued. This relief continued throughout the season.

Case 26.—Miss M. R., aged 25, had had autumnal hay-fever seven or eight years; no asthma. Maternal aunt had had hay-fever since childhood. Ophthalmic and cutaneous reactions to ragweed were positive. June 11, calcium chlorid was prescribed, 1 gm. three times a day, but owing to some gastric distress which it seemed to cause, the dose was much reduced for several weeks. The full dose, however, was taken later and continued. No hay-fever symptoms were experienced until September 5, when there was slight sneezing, and itching in the throat. During the rest of the season symptoms were practically absent.

Case 29.—Dr. W. A. K., aged 40, had had autumnal hay-fever for fifteen years, and slight asthma recently. July 7, calcium chlorid was prescribed, 1 gm. three times a day. Patient reported in October that he had experienced only trifling symptoms at any time during the season.

Case 33.—Miss F. P., aged 43, had had vernal hay-fever, usually beginning about June 1 and lasting until the end of July. June 12, she was having about the usual amount of trouble. The ophthalmic reaction to ragweed was negative. Calcium chlorid, 1 gm., three times a day, was prescribed, with much relief, almost at once. She reported, August 25, "I have been practically free from symptoms about half the time. The rest of the time, partly free, and partly in trouble. About July 28 took a long railway journey, weather dry and dusty, with no hay-fever symptoms at all."

Case 42.—F. W., aged 28, had had hay-fever beginning in August for several years. Father had hay-fever; no asthma. Ophthalmic and cutaneous reactions to ragweed were negative. Cutaneous and nasal reaction to peaches was positive. Calcium chlorid, 2 gm., three times a day, was prescribed. August 25, the patient was very comfortable, with scarcely any symptoms. Cutaneous reaction to peaches was negative. The patient had stopped eating peaches. During the rest of the season there were very few hay-fever symptoms.

Case 44.—Miss C. S., aged 25, had had hay-fever for nine years, beginning in early spring and lasting until the second week in October. She had asthma. Symptoms were marked. June 30, the hay-fever symptoms were distressing. Ophthalmic and cutaneous reaction to ragweed was negative. Calcium chlorid, 1 gm., three times a day, was prescribed. Patient reported September 25. The hay-fever symptoms, which were severe, disappeared after the second dose of the medicine, whereupon she promptly stopped taking it regularly. Afterward she took a long auto journey without symptoms. During the summer she had occasional slight symptoms, which disappeared immediately when she took the medicine. She has been practically free from all hay-fever symptoms ever since beginning to take the drug. She thinks the results are "wonderful." She would probably have taken the drug more regularly if it had not seemed to increase the secretion of urine.

CONCLUSIONS

1. Some hay-fever patients taking not less than 3 gm. of calcium chlorid daily, even for a short time, are practically relieved from all hay-fever symptoms.
2. Calcium chlorid may be taken in doses of 3 gm. daily for an indefinite time without any apparent injury.
3. It is not indispensable in all cases for a hay-fever patient to take calcium chlorid over a long period of time in order to secure relief.
4. Calcium salts may be given, even when the nature of the patient's sensitization is not known.
5. The clinical results from the administration of calcium chlorid in cases of hay-fever are such as to warrant its further trial.

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THE SPLEEN

ITS ASSOCIATION WITH THE LIVER AND ITS RELATION TO CERTAIN CONDITIONS OF THE BLOOD*

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For many years when doing abdominal operations, if it could be done without risk to the patient, it has been my practice to make a careful manual examination of the contents of the abdomen. Thus I have been impressed with the fact that the spleen shows enlargements and other physical changes rather regularly in connection with diseases of the liver and of the blood. In papers on this subject written at various times, attention has been called to the fallacy of the physical examination of the spleen, and it may be said that unless the spleen is sufficiently enlarged to be felt beyond the free border of the costal margin, the enlargement would probably not be recognized. At times careful physical examination by percussion, for instance, has apparently revealed the area of splenic dulness, but on the opening of the abdomen the fact showed how fallacious percussion had been. Faith in these methods has been due to the fact that in certain diseases, like typhoid, which often end in death, the spleen is generally enlarged, and with this knowledge at hand a diagnosis by percussion has been made and proved correct at necropsy. By means of the Roentgen ray, the possibilities of accurately examining the spleen for such enlargements are developing. The roentgenologist has been able to outline the kidneys, the liver, etc., as well as the digestive and thoracic organs, with a marvelous degree of accuracy, and we may expect that he will accomplish the same for the spleen in the near future. The humiliating mistakes made by surgeons, of which we have made our share, of diagnosing as splenic enlargement a cancer of the stomach or colon or tumor of the kidney, are now avoidable by careful roentgenographic exclusion of these organs

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* Read before the Northern Tri State Medical Association, Toledo, Ohio, Jan. 11, 1916.

SPLEEN AND LIVER

The spleen is closely associated with the liver in function, deriving its blood supply from the celiac axis, the same source as those derivatives of the foregut, the stomach, liver and pancreas, and, like these organs, its vein becomes part of the portal circulation It is evident that, whatever the function of the spleen, it must send such material as may be culled from the blood to the liver for further elaboration And, taking experimental and clinical knowledge into consideration, it may be surmised that many of the cirrhoses of the liver may be due to the fact that the liver, the great organ of defense against parasitic and chemical toxic agents, has become unable to care for these products by absorption and elimination, and attempts connective tissue encapsulation in order to render them harmless In the case of diffuse poisons like alcohol, the liver may become cirrhotic in the attempt to render innocuous deleterious material We see the close association between the spleen and liver well illustrated in hypertrophies of the spleen attendant on cirrhotic processes of the liver and in secondary cirrhosis of the liver in the Banti stage of the enlarged spleen of splenic anemia

Investigation leads to the conclusion that the function of the spleen is not only to remove from the blood bacteria and other toxic agents, but also to conserve the food values of broken-down blood corpuscles, especially red cells, sending their remnants to the liver for elaboration into energy-producing substances This is shown by the fact that there is increased hematin, and a relative increase of leukocytes, in the splenic vein These facts bear out the old theory that the spleen is a sieve selecting certain substances — parasitic, toxic and products of degeneration — and being unable to deal with them, passes them on to the liver for conservation That the liver may adequately maintain this important function, it has been given the power of regeneration If a large part of the liver of a dog be removed, it will be replaced by new hepatic tissue, while in the kidney and other organs of the body regeneration does not take place to so great an extent, but function is maintained by a hypertrophy of existing tissues

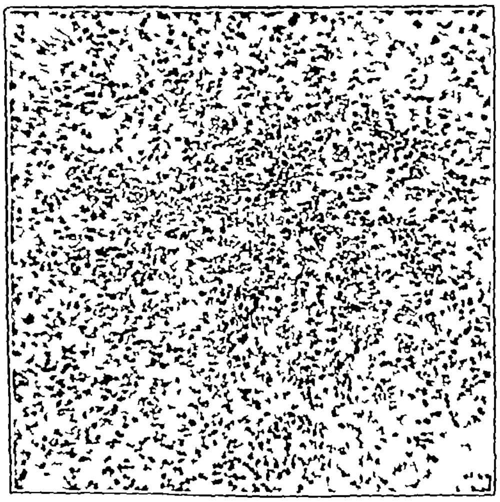

Fig 1 (Case A 119102) — Microscopic section of syphilitic spleen showing edge of atypical gumma with giant cells

The function of defense of the liver is shown by Adami,[1] who points out that the leukocytes of the living body pass out on the free mucous surface of the duodenum and upper jejunum, and pick up bacteria which they usually destroy, but should they fail to destroy them, the liver becomes the agent of destruction, and the pigmented areas in the liver are derived from such slaughtered bacteria Research has shown that the phagocytes of the body are developed in direct response to bacterial invasion As Vaughan[2] has pointed out, the period of incubation of a disease is the time which is necessary to develop or train leukocytes to bodily defense He shows that the reaction we call typhoid fever is a defense manifestation, and that preventive serums, such as vaccination for smallpox, typhoid, etc, act to educate the cells of the body to resistance against certain organisms and to change the proteins of the body so that they no longer act as food for these bacteria Vaughan advances the theory that bacteria are not vegetable organisms but parasitic growths in a distinct class by themselves Eccles[3] suggests that the phagocytes of the body live on bacteria, and that the food values of the bacteria are thus conserved He looks on the tonsils and other lymphoid structures, such as the appendix, as what may be called chronic vaccinators, since through the tonsils are constantly permitted to pass a certain number of bacteria *which stimulate the development of phagocytes* This shows that a moderate reaction in the tonsil may not always be the cause of an impending generalized infection, but rather an early defense manifestation

Rosenow[4] has shown that streptococci can be trained to attack special organs By injecting into the circulation strains of streptococci derived from phlegmonous cholecystitis, he has been able to cause phlegmonous cholecystitis to appear in animals if they are cultivated on artificial mediums for a time they are prone to produce ulcer of the stomach and appendicitis, whereas if they are passed through animals pancreatitis is usually produced, all of which is evidence of the selective affinity of bacteria and probably other substances for certain tissues or organs

The spleen is the organ of the body in which the blood stream comes in contact with the pulp, that the process of sifting may be more readily carried out Must it be understood that all the blood in the body passes through the spleen in a haphazard way to have this function properly performed? Is it not more probable that the spleen has the power of attracting to it certain substances circulating in the blood, as shown by splenic enlargements of typhoid, malaria, etc ?

It is interesting to note how the spleen is controlled in its function Stimulation and control is exerted over the voluntary parts of the body by the cerebrospinal nervous system, over the involuntary or vegetative part of the body by the sympathetic ganglion acted on the internal secretions In addition, there is the essential rhythm of nonstriated muscle The vegetative part of the body was well developed before the organism had reached the stage of a cerebrospinal nervous system, a comparatively late development The sympathetic nervous system, probably mesoblastic in origin and now closely associated with the cerebrospinal nervous system, acts in association with the internal secretions, and all organs of important internal secretion, such as the suprarenals and the hypophysis, in which gland and sympathetic ganglia are present, are so closely associated as to form a single organ

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[1] Adami, J G On Latent Infection and Subinfection and on the Etiology of Hemachromatosis and Pernicious Anemia The Journal A M A Dec. 16 1899 p 1509 Dec. 23 1899 p 1572

[2] Vaughan V C. Infection and Immunity Commemoration Volume, Chicago American Medical Association 1915 p 1

[3] Eccles R. G The Tonsils and the Struggle for Existence Med Rec. New York 1915, lxxxviii 47

[4] Rosenow E. C. Elective Localization of Streptococci The Journal A M A Nov 13 1915 p 1687

That the spleen does not have an important internal secretion is shown by the fact that its removal does not deprive the body of any important constituent, and that it is not under the complete control of the nervous system is shown by its extremely scanty supply from Auerbach's plexus But the spleen does have a considerable amount of nonstriated muscle fiber, and it is altogether probable that this muscle has an important function and possibly is responsible for the digestive rhythmic change in the size of the spleen

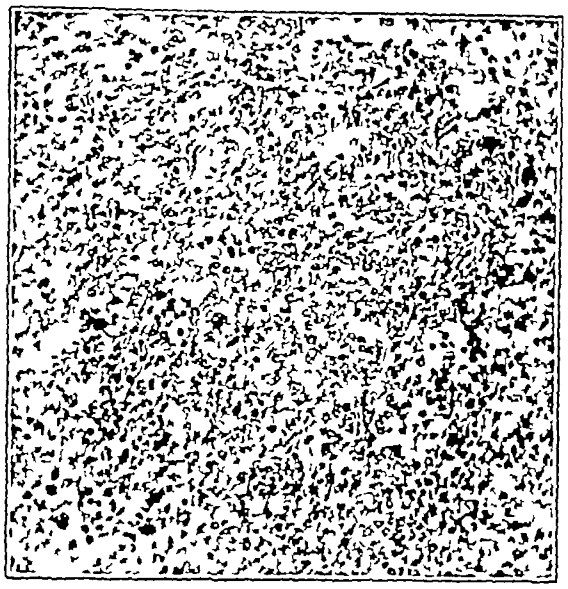
Fig 2 (Case A 131884) — Microscopic section of spleen in a case of so called Hanot's jaundice Section shows marked fibrosis with increase of pulp and lymphoid cells

All the nonstriated muscle of the body, for example, the musculature of the alimentary tract, *of the bladder ureter, uterus,* etc, has the power of rhythmic contraction the same as the heart A small bit of intestine put in Locke's solution will beat for hours The sino-auricular node of the heart gathers the impulses from the primary contractions of the muscle fibers of the auricle and is the pacemaker of the heart, the impulse passes from the sino-auricular node to the ventricle through the bundle of His timing the ventricular beat, and this curious association of the many branched nodal cell of Keith[5] with the nonstriated muscle occurs in different areas over the entire digestive and genito-urinary tracts (Keith,[5] Cannon[6] and Alvarez[7])

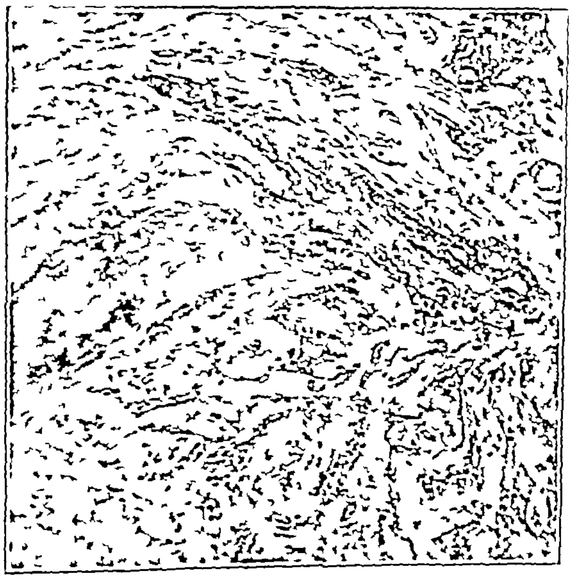
Fig 3 (Case A 20818) — Microscopic section of spleen in a case of advanced splenic anemia with Banti's syndrome Section shows connective tissue greatly increased with endothelium of venous sinuses swollen

According to Keith, nodal tissue occurs in definite amounts in at least seven gastro-intestinal situations First, about the cardia, controlling the rhythmic contractions of the stomach and the emptying of the esophagus it is entirely probable that the so-called idiopathic dilatation of the esophagus, or cardiospasm, is the result of failure of nodal control The same tissue found about the pylorus in disease causes *pylorospasm* A sphincter exists just below the common duct in certain of the lower animals, and Ochsner[8] has shown that remnants of this muscle are to be found in man Along this portion of the duodenum nodal tissue is to be found, which may explain the occasional case of acute dilatation of the stomach and upper duodenum which has masqueraded as true mechanical gastromesenteric ileus

Nodal tissue is found about the ileocecal orifice Keith believes that this has to do with ileal stasis and lies behind those important phenomena which Lane[9] has described Nodal tissue is found in the ascending colon, a situation in which, in many of the lower animals, there exists a true colic sphincter, and this may have some relation to cecal stasis and the gastrocolic reflexes described by Hertz[10] Again, this tissue is found about the rectosigmoid, and a failure of control may be the cause of giant colon or Hirschsprung's disease

According to Starling and Bayliss[11] the intestinal tract has two rhythms, the first acting from ten to twenty times to the minute, which Mall[12] suggests may be the *heart of the portal circulation* forcing the blood in the radicles of the portal veins to the liver, and the second, acting once or twice to the minute and which we recognize as the peristaltic wave

To go further into the interesting phase of a subject to which Keith has called attention would lead us far afield Suffice to say that the rhythmic waves are automatically checked by sphincters, and in failure of rhythmic intestinal movement and sphincter control may lie the secret of so-called intestinal intoxication and neurasthenias of intestinal origin The presence of nonstriated muscle in the spleen gives important evidence of the primary relationship of the spleen to the digestive system

RELATION TO THE BLOOD

The relation of the spleen to the blood has long been known The spleen, the liver, and the adenoid and lymphoid structures of the body in the fetus are blood - producing organs All red-blooded animals possess a spleen The earliest blood cell is white, a lymphatic descendant of the mesenchyma cell Leukemia is a reversion of all these structures to the primitive condition of the production of embryonic white cells, and bears the same relation that the uncalled-for production of embryonic epithelial and connective tissue cells bear to carcinoma and sarcoma At birth the spleen loses its power to produce red cells, except on extraordinary occasions following hemorrhage (Osler[13]), but continues to produce a certain number of white cells

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[5] Keith, A A New Theory of the Causation of Enterostasis, Cavendish Lecture, Lancet, London, 1915, ii, 371

[6] Cannon, W B The Importance of Tonus for the Movements of the Alimentary Canal, Arch Int Med, October, 1911, p 417

[7] Alvarez, W C Functional Variations in Contractions of Different Parts of the Small Intestine, Am Jour Physiol, 1914, xxxv, 177, Further Studies on Intestinal Rhythm, Am Jour Physiol, 1915, xxxvii, 266

[8] Ochsner, A J Constriction of the Duodenum below the Entrance of the Common Duct, and Its Relation to Disease, Tr Am Surg Assn, 1905, xxiii, 314

[9] Lane, W A The Kink of the Ileum in Chronic Intestinal Stasis, London, Nisbet, 1910, The First and Last Kink in Chronic Intestinal Stasis, Lancet, London, 1911, ii, 1540, A Clinical Lecture on Chronic Intestinal Stasis, Brit. Med Jour, 1912 i, 989

[10] Hertz, A F The Ileo-Caecal Sphincter, Jour Physiol, 1913, xlvii, 54 Hertz, A F, and Newton, A The Normal Movements of the Colon in Man, Jour Physiol, 1913, xlviii, 57

[11] Bayliss, W M, and Starling, E H The Movements and Innervation of the Small Intestine, Jour Physiol 1900 1901, xxvi, 127

[12] Mall, F A Study of the Intestinal Contraction, Johns Hopkins Hosp Rep, 1896, i, 37

The blood pictures of the various anemias are often reproductions of the normal blood of lower animals in which a shorter heredity has given less fixed characteristics than in man The spleen seems to become the graveyard of wornout corpuscles, especially of red cells However, it probably does not act on its own initiative, but as though the red cells were sensitized some other place in the body and destroyed in the spleen This is shown by the increased fragility of the red cells of Chauffard[14] and Widal,[15] which occurs in hemolytic jaundice The enlarged spleen of splenic anemia, hemolytic jaundice, and possibly the primary anemias may be a work hypertrophy In all but one patient with pernicious anemia operated on in our clinic, the spleen on removal has been found to be definitely enlarged Taking the average weight of the spleen to be 195 gm (Sappey[16]), the spleens removed by us for pernicious anemia have weighed from 360 to 910 gm, except the one mentioned, which was underweight It would appear that the excess of splenic tissue produces a hypersplenism, as suggested by Eppinger,[17] and unnecessary destruction of red cells

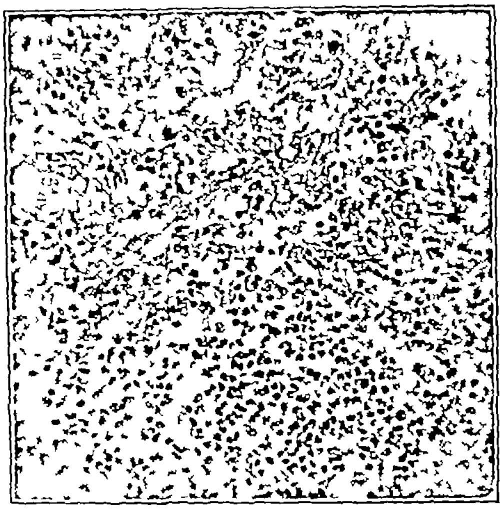

Fig 4 (Case A 137566) —Microscopic section of spleen in a case of early splenic anemia in a child Section shows lymphoid hypertrophy with moderate diffuse fibrosis

Just as there may be many exciting causes for exophthalmic goiter, so there may be many exciting causes of enlarged spleen The splenomegaly sometimes found in patients with syphilis and usually associated with syphilis of the liver apparently has a definite causal relationship to the chronic anemia of the secondary type which is present This anemia has promptly been relieved by removal of the spleen in a few cases on record and in three patients of our own The spirochetal action on splenic tissue in these instances results almost always in a chronic fibrosis and only rarely in gummas On the other hand, gummas of the liver are quite common (Fig 1)

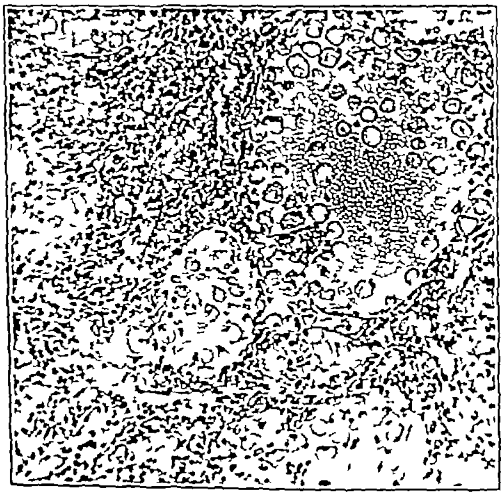

Fig 5 (Case A 8869) —Microscopic section of spleen in a case of Gaucher s disease Section shows venous sinuses more or less filled with desquamated hydropic reticulo-endothelium

Wilson[18] is now at work on our pathologic material, and is able to show that there are microscopic differences (Figs 1 to 7) which it is hoped may prove of differential value in the various splenic enlargements, and which may give us a clue to the reason why the removal of the spleen cures or is of the greatest possible benefit in a number of different conditions of the liver and blood heretofore fatal This suggests that the spleen, an organ not necessary to life, and not causing disease on its own initiative, is the one link in an otherwise fatal chain which can be easily and safely broken With this assumption the idea that the spleen is an obsolete organ falls, just as has been the case with the tonsil and possibly with the appendix The enormous blood supply shows the opposite of the vascular conditions of obsolete organs, in which there is always a reduced blood supply As the removal of the tonsil may prevent generalized infections responsible for all sorts of acute and chronic conditions, the tonsil itself not being essential to life, so splenectomy may cure certain disease conditions of the nutritive system, especially those of the liver and of the blood

I should apologize for this lengthy preamble which, however, all too briefly outlines certain facts and near facts in splenic physiology and pathology, yet there is a value in getting far enough back to secure a good perspective, to see the whole picture, rather than be lost in some particular detail

ENLARGEMENTS OF THE SPLEEN

These may be divided into four groups (1) new growths, (2) infections, (3) enlargements associated with hepatic disease, and (4) those associated with the blood

1 *New Growths*—The first will not be considered at this time I shall very briefly take up the results of splenectomy in some of the diseases in the latter three groups

2 *Infections* — In so-called primary tuberculosis of the spleen the removal of the organ has cured a few patients It is quite likely, however, that tuberculosis is practically never, in reality, primary in the spleen, and that this diagnosis is the result of insufficient clinical study Our one patient of this type died from general miliary tuberculosis after a temporary improvement of several months In three instances we

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[13] Osler W Principles and Practice of Medicine New York D Appleton & Co, 1912

[14] Chauffard, A Pathogenie de l ictere congénital de l adulte, Sem méd 1907 No 3 p 25 Les ictères hemolytiques ibid January 1908 Cholelithiase pigmentaire dans un cas d ictère congénital hémolytique analyse chemique des calculs, Bull et mém Soc. mé. d hôp de Paris 1912 xxxiv 80 cited by Elliott and Kanavel Surg Gynec. and Obst., 1915, xxi 21

[15] Widal A and Brule Differenciation de plusieurs types d icteres hemolytiques Presse méd 1907 p 641 cited by Elliott and Kanavel (Footnote 14)

[16] Sappey cited by Piersol G A Human Anatomy, Philadelphia, J B Lippincott Company 1913 p 1781

[17] Eppinger, H Zur Pathologie der Milzfunktion Berl klin Wchnschr 1913 L, 1509 1572 2409

[18] Wilson L. B The Pathology of Splenomegaly Surg Gynec. and Obst. 1913 xvi 240 Pathology of Spleens Removed for Certain Abnormal Conditions of the Blood Ann Surg, 1915 lxii 158

have removed greatly hypertrophied spleens from patients suffering with chronic syphilis and marked anemia In one of these, specific treatment had been carried out for two years, in another for six months, without satisfactory improvement in the general condition or the anemia Following splenectomy, there was marvelous improvement of the anemia in all of them

Marked enlargement of the spleen is quite frequently present in patients with a history of chronic recurring septic conditions These spleens are usually smaller than those of splenic anemia, although occasionally we have seen a very large spleen filled with infarcts We have removed the spleen from seven patients with histories of chronic recurring sepsis Patients of this type usually have a lowered resistance, and cardiorenal insufficiency is most likely to influence the ultimate prognosis unfavorably

3 *Splenic Enlargements Associated with Hepatic Disease*—Primary cirrhosis of the liver accompanied by enlargement of the spleen is remarkably similar to primary enlargement of the spleen with secondary cirrhosis of the liver, and in the late stages of either disease it is very difficult to determine in a given case whether the process was primary in the liver or in the spleen In the same way it is difficult to differentiate between hypertrophic biliary cirrhosis of the liver of the Hanot type in which there is jaundice, and hematogenous jaundice, which has its origin in the spleen Primary biliary cirrhosis of the Hanot type is doubtless a rare disease It may last for from six to ten years, and the spleen as well as the liver is always enlarged It is a disease of young adult life As in hemolytic jaundice, there are crises marked by tenderness in the region of the liver and spleen with a temporary increase of jaundice In a small number of instances in which Hanot's cirrhosis has been diagnosed, the spleen has been removed with undoubted benefit, and possible cure We have seen one such case Hemolytic jaundice can usually be differentiated by the fact that the fragility of the red cells in the peripheral circulation is decreased, whereas in cirrhosis of the liver the resistance of the red cells is usually increased In hemolytic jaundice urobilin, but not bile, is present in the urine, and the jaundice is not associated with itching Yet to what extent these cases of biliary cirrhosis have been confused with those of hematogenous jaundice of splenic origin, and to what extent the syndrome which has been called Hanot's cirrhosis of the liver actually exists, further investigation must decide

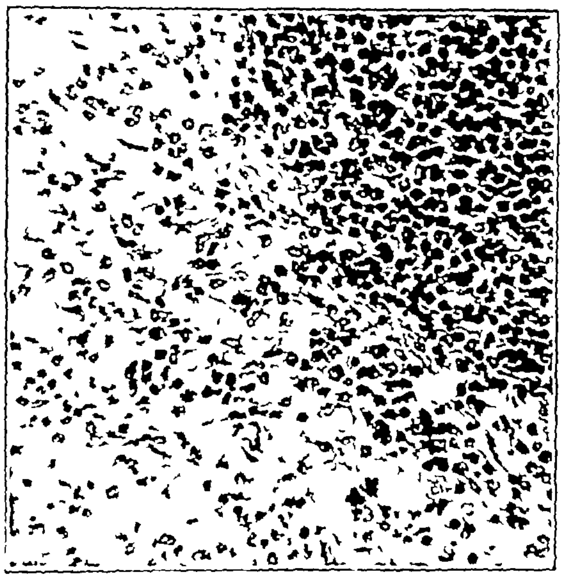

Fig 6 (Case A 86218) —Microscopic section of spleen in a case of hemolytic jaundice Section shows sharp demarcation of increased lymphoid tissue by overgrowth of reticulum

In four instances we have removed a greatly enlarged spleen in patients suffering from portal cirrhosis of the liver It is too early to know whether or not the end-results will justify the operation Three of our patients, however, have markedly improved, and the ascites and anemia have disappeared

It must be evident to all that the spleen is only one avenue by which noxious agents may reach the liver and cause a cirrhosis It is probable that a large number of cirrhoses have their origin in the gastro-intestinal tract, but, no matter what the portal of entry may be, there is usually a concomitant enlargement of the spleen

In general, the common forms of cirrhosis of the liver may be divided into three classes first, portal cirrhosis, in which the toxic material obtains entrance through the portal system and the connective tissue proliferation advances from the portal spaces and in which the symptoms are those of portal obstruction, second, biliary cirrhosis, in which the infectious agent may be either ascending from the biliary tract or hematogenous, and in which the most pronounced clinical sign is chronic jaundice, while portal obstruction comes on late, third, mixed types, which are undoubtedly not rare and in which a preoperative diagnosis is often impossible[19] (Fig 2)

4 *The Blood*—Splenic Anemia Patients with anemias associated with enlargements of the spleen are cured or greatly benefited by splenectomy The syndrome called splenic anemia, the terminal stage of which is known as Banti's disease, may be cured by removal of the spleen in a high percentage of cases (Fig 3)

Clinically, splenic anemia is an entity The spleen is large, there is a definite anemia showing a reduction of reds and a low hemoglobin, and the disease is progressive, ending in death The process may be exceedingly slow and at times completely interrupted in its clinical symptoms for several years, but all enlargements of the spleen that cannot be shown to have some other definite cause must be looked on as incipient splenic anemia The future history of such cases will finally prove the large majority of them to be of this character Hemorrhage from the stomach at times is one of the early symptoms, even before the spleen is much enlarged These cases of gastric hemorrhage in which no other origin can be found should be carefully examined for evidence of splenic anemia In the later stages, after ascites has developed, and the liver has become cirrhosed, but little may be expected from the removal of the spleen, and yet several of our patients in this terminal condition have been cured by splenectomy (Fig 4)

Splenic anemia with adult characteristics is not infrequently seen in childhood, and is promptly relieved by splenectomy It is quite probable that the pseudoleukemic anemia of von Jaksch is merely the infantile type of splenic anemia, the increased leukocytes (30,000 or more) being merely a difference in the reaction of the blood due to infancy (Giffin) It may be said in this connection that while leukopenia is usually present in splenic anemia, there are a number of instances in which patients having a moderate leukocytosis (20,000 or more) have been operated on at various ages and remained well afterward Several such patients operated on by us were previously diagnosed as having true leukemia, and were treated for it

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[19] Giffin has been very much interested in hepatic cirrhosis in connection with splenic enlargement I am indebted to him for the clear statement of the present view of these conditions (Giffin, H Z Splenectomy for Splenic Anemia in Childhood and the Splenic Anemia of Infancy, Ann Surg, 1915, lxii, 679, Splenectomy in the Treatment of Splenomegalia, Associated with Syphilis, Am Jour Med Sc, to be published)

With the splenic anemias may be classified Gaucher's disease, which is shown by Brill and Mandelbaum[20] *to appear before the thirteenth* year and average twenty-five years of duration, and the patient usually dies from some complication The spleen may become of enormous size In the terminal stages of Gaucher's disease or large cell splenomegalia, endothelial growths of the same character are found in the liver, lymphatics, etc Our experience in the removal of the spleen in three cases of this kind has shown that in the earlier stages the condition is cured by splenectomy (Fig 5)

One of the most interesting anemias of splenic origin is the so-called hemolytic jaundice, a disease of the young, accompanied by acholuric jaundice, that is, there is no evidence of biliary obstruction, bile is present in the stools and there is no itching There are two types of this disease, one the familial type of Minkowski,[21] which often affects several members of the same family and is less severe in its manifestations, many patients living out a life expectancy The other is the acquired type of Hayem[22] and Widal,[15] which comes on during puberty or adolescence and usually ends in death In hemolytic jaundice the patient suffers from crises accompanied by tenderness over the liver and spleen, an increase of temperature and quickness of pulse We have done nine splenectomies for hemolytic jaundice No other operation I know of gives more brilliant and striking results Within twenty-four hours the jaundice begins to disappear, and in a few days the patients perhaps for the first time have clear complexions, the anemia is rapidly overcome and they remain well (Fig 6)

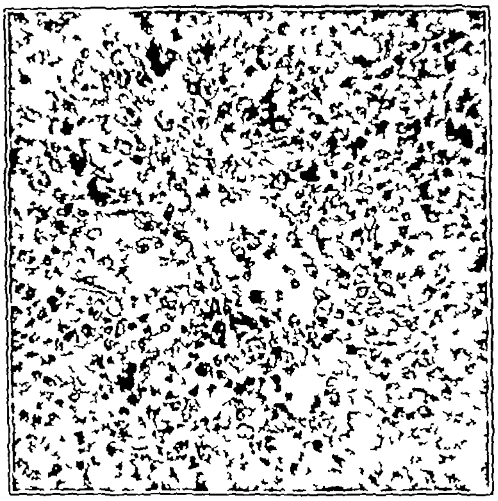

Fig 7 (Case A 128367) —Microscopic section of spleen in a case of early pernicious anemia Specimen shows a marked lymphocytosis and some hypertrophy of the endothelium of the sinuses

Pernicious Anemia Eppinger first called attention to the remarkable improvement of the patient after removal of the spleen in pernicious anemia Although sufficient time has not elapsed to say that these patients are permanently cured, as Cabot[23] has said, no other means of therapy has so promptly brought about an improvement in the condition of the patient and so definitely relieved the anemia It is true that in the late stages when there are spinal cord changes these changes do not disappear, although the condition is marvelously improved, nor do all the characteristic cells of pernicious anemia disappear from the blood But from our experience with nineteen patients, I feel justified in performing splenectomy in selected cases of pernicious anemia, and have at least the hope that if it is done sufficiently early in the course of the disease, it will permanently check if not cure the condition (Fig 7)

Preliminary to splenectomy and, in some cases, following it, transfusion of blood may be necessary The blood of the donor should always be tested in connection with the recipient for agglutination and hemolysis

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[20] Brill, N E. and Mandelbaum F S Large Cell Splenomegaly (Gaucher s Disease) A Clinical and Pathological Study Am Jour Med Sc. 1913 cxlvi 863

[21] Minkowski O Ueber eine Hereditare unter dem Bilde eines chronischen Icterus mit Urobilinurie Splenomegalie und Nierensiderosis verlaufenden Affection Verhandl d Kong f inn Med 1900 xviii 316

[22] Hayem G Sur un variéte *particulière* d ictère chronique ictère infectieux chronique spléno megalique Presse méd 1898 i 121 Nouvelle contribution a l étude de l ictère infectieux chronique splenomégalique Bull et mém Soc. méd d hôp de Paris, 1908 Series 3 xxv 122

[23] Cabot R C Discussion on Blood and Blood Diseases abstr The Journal A M A, June 26 1915 p 2164

CAUTERIZATION AND FULGURATION OF BLADDER TUMORS

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AND

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The past ten years have witnessed a remarkable and beneficent change in the treatment of benign neoplasms of the bladder Fulguration has become by common consent the method of choice for all cases in which it can be applied The credit for this remarkable advance in vesical surgery lies at the door of Dr Edwin Beer,[1] who has made this new field peculiarly his own, both by discovery and by development

Beer's pioneer work has thus wrought a most welcome transformation in what was previously often a perplexing situation He has reduced the complex to the category of the simple, always a notable surgical achievement, so that now instead of putting these patients to bed and exposing them to the risks and discomforts of an operation, we treat them as ambulatory office patients and destroy the growth often in from one to several sittings

In cases of recurrence the greatest benefits of the new plan are realized, for here the patient continues the treatment at intervals and without discomfort, until the entire trouble is finally eradicated to return no more Under former conditions a recurrence simply meant an outlook for another operation and a siege in the hospital

Here are two illustrative cases from personal experiences

Case 1 (Hosp No 5480) —Miss M G., aged 41, had been operated on twice before for papilloma of the bladder, the first time by Dr Harris of Battle Creek, Sept 26, 1911, and again for a recurrence by another operator, Aug 28, 1912, the suprapubic route being taken both times Six months later she was examined by two surgeons in Brooklyn, and a return of the trouble was found Both surgeons advised the use of the high frequency current Treatment by Roentgen ray had also been used When first seen by Dr Kelly she was examined through the open cystoscope, May 29, 1914, and the following condition noted

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[1] Beer, Edwin Removal of Neoplasms of the Urinary Bladder The Journal A M A May 28 1910 p 1768 The Treatment of Papillary Tumors of the Urinary Bladder with the High Frequency Current (Oudin) ibid Nov 16 1912 p 1785 Ann. Surg August 1911 Treatment of Benign Papillomata of the Urinary Bladder with High Frequency Current Ann Surg June 1915 lxi 109 ibid lxii 496 Treatment of Benign Papillomata of the Urinary Bladder with the Oudin High Frequency Current Introduced through a Catheterizing Cystoscope Med Rec. New York, Feb 8 1913

Along the posterior wall half way from the vertex to the base of the bladder was a transverse area of ulceration, 26 mm broad A similar area was seen in the vertex, 18 mm in diameter, directly opposite the internal ureteral orifice on the posterior wall was a papillomatous growth, 1 cm in diameter A similar one grew just to the left of this, from 6 to 8 mm in diameter These growths were fulgurated through the open cystoscope Since that date the patient has returned to the hospital at intervals of from one to two months, and numerous small tumors have been detected sprouting in various locations and treated by fulguration The treatments were given May 29, June 29, Aug 17, Sept 28 and Dec 24, 1914, and Jan 7, Jan 28, Feb 18, April 2, June 4, June 18, Aug 5, Sept 3 and Dec 17, 1915

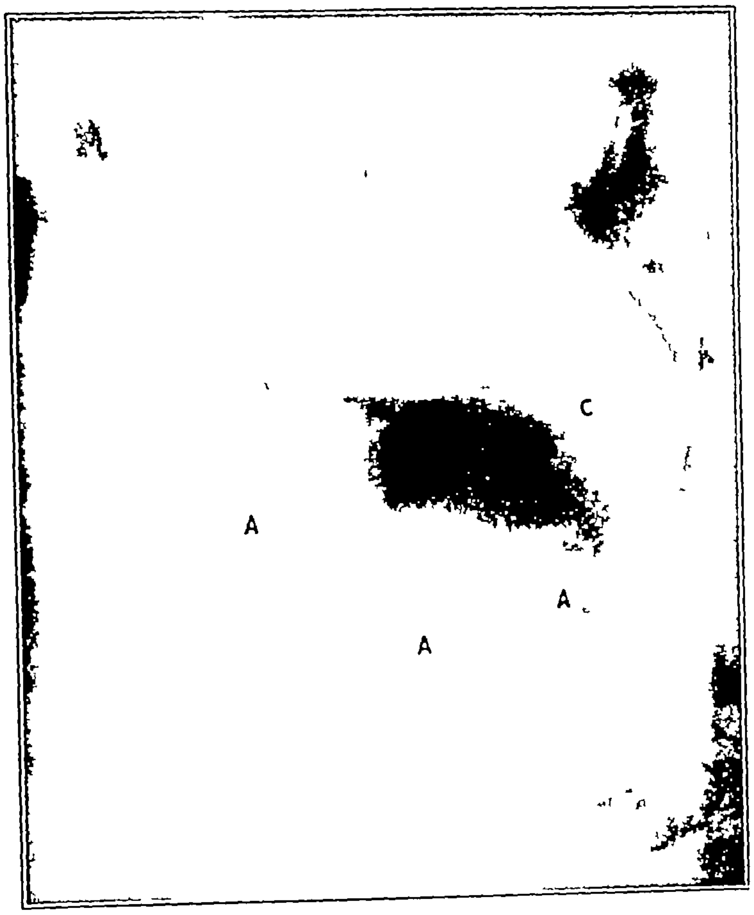

Fig 1—Bladder in Case 2 *A* conglomerate mass of large growths, *B*, injected bismuth in suspension, *C* zone of urine, water and air with the bladder wall in the periphery

When last treated, Dec 17, 1915, the bladder was found to be entirely normal except for two small superficial spots about 4 and 2 mm in diameter above the right ureteral orifice These were fulgurated for a few seconds, and the patient was told to return in several months for another examination

This patient is a monument to fulguration, for she never could have survived the numerous operations she would have needed to remove all these recurring growths

Let us here note an exception to this desideratum of treating all cases by fulguration When the tumors are massive and there are numerous implantations, it is often preferable to make a suprapubic section and extirpate all visible disease, and then to follow up the case by fulguration if there is any recurrence Here is a case in point

Case 2 (Hosp No 4079)—Miss B, aged 38, first seen May 8, 1912, complained of passing blood in the urine for eight years An aeroscopic examination through a Kelly cystoscope showed a large papillomatous tumor attached to the anterior wall of the bladder and seemingly filling it An examination by Roentgen ray with a moderate bismuth injection of the bladder was made (Fig 1) Here we have an astonishing picture the area *A* represents a conglomerate mass of large growths and shows beautifully their papillomatous nature About the tumor lies the dark zone *B*, which represents the injected bismuth in suspension Around this the gray area *C* is the zone of the urine, water and air with the bladder wall in the periphery

Dr Kelly operated in May, 1912, through a suprapubic incision A small growth, 1 5 cm in diameter, was found attached to the posterior wall, three large cauliflower growths the size of hen's eggs lay on the anterior wall of the bladder, one of them grew from the trigonum beneath the urethra and between it and the left ureteral orifice, and then encircled and extended down the urethra a short distance, another lay on the anterior wall above the ureteral orifice These were removed, in all, nine tumors being taken out The patient made an uneventful recovery and was discharged June 15, 1912, and remained well and free from all her old symptoms until March 6, 1914, when she had vesical pain, and bleeding on one occasion An aeroscopic examination, April 6, 1914, showed a recurrence the size of a cherry near the left ureteral orifice, this was fulgurated, and there has been no return of symptoms to date

There is a borderline between cases which are manifestly best for fulguration, and this small group which we are still inclined to reserve for surgery, where surgeons will discuss their choice of method, one operating, while another prefers the high frequency current, but there is, we believe, a group of massive tumors at present beyond the border where operation is best in competent surgical hands

We believe that the open aerocystoscope (Kelly's), presents incontestible advantages for seeing these growths, and determining their number and relations, and above all in most cases in enabling the surgeon to see and to handle the pedicle

A growth which appears sessile and malignant by the water cystoscope may thus be found by the air cystoscope to be pedunculate We believe that the facility of exposure and treatment through the open cystoscope (Nos 10 to 12) enables one also greatly to shorten the period of treatment in attacking the pedicle, rather than the peripheral parts which are more accessible The difference in methods is sometimes comparable to the difference, on the one hand, in taking down a tree by lopping off its branches one by one in the effort to reach the trunk, and on the other of cutting off the

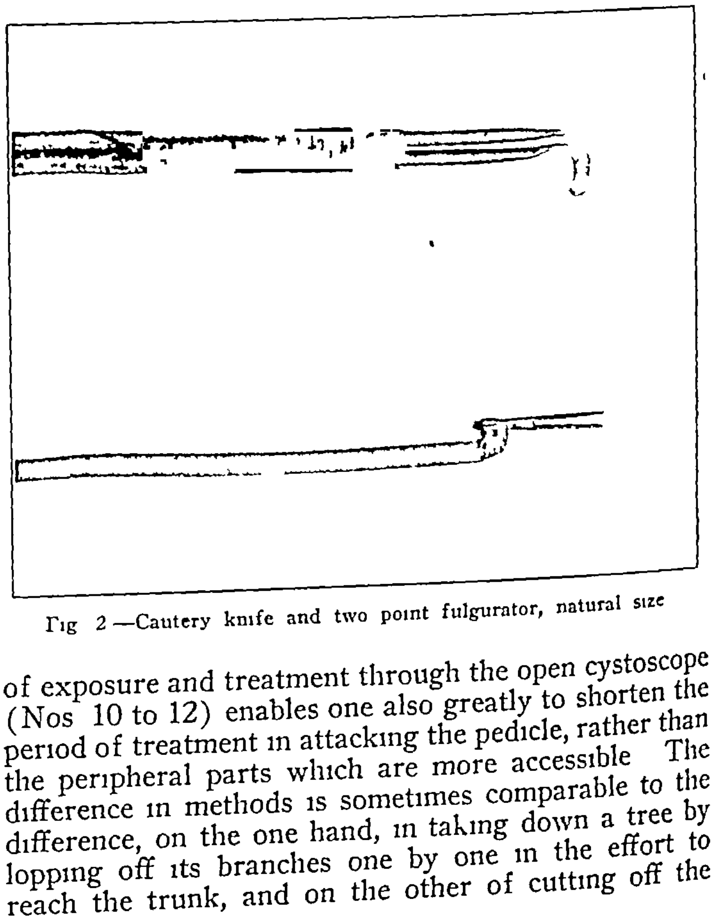

Fig 2—Cautery knife and two point fulgurator, natural size

diet and theobromin therapy depend on the severity of the precordial and other symptoms. If edema be marked, stringent Karrell diet should be carried out for one week. In less severe cases, two or three milk days with theobromin, followed by similar periods of digitalis medication, are indicated. To continue the improvement, it is advisable to have an occasional Karrell day with theobromin for months afterward. The iodids have always been popular in the treatment of arteriosclerotic conditions. The secret of their efficacy may be the fact, now so well known through studies of the Wassermann reaction, that arterial disease is frequently of syphilitic origin. Where this origin is proved or suspected, the iodids are useful; otherwise I have found them of no benefit.

The following case illustrates the effect of therapy:

Case 1.—Mrs. E., a buxom looking woman of 43, with no children, has complained for three years of dyspnea on walking, and of stabbing precordial pains radiating to the left shoulder. The Wassermann blood reaction is negative. The urine contains a trace of albumin and occasionally hyaline casts. There is slight pretibial edema. Physical examination reveals typical signs of aortitis. The orthodiascopic tracing shows an enlarged left ventricle and a dilated aortal arch. The precordial area is tender on deep pressure. The lowest systolic blood pressure has been 175 mm., the highest, 220 mm. There has never been any correlation between the symptoms and blood pressure. For the first few months she was put on digitalis, theobromin sodium salicylate and occasional Karrell milk days. Within two months the cardiac pains and pretibial edema disappeared. Later, when she became remiss in taking medication and diet, dyspnea and pain recurred. Under stricter surveillance, and the same medication combined with absolute rest at home on the Karrell days, twice weekly, she again slowly improved. This plan of treatment has been followed for three years. The blood pressure is still high, data revealed by physical and Roentgen examination are the same, but there is very marked clinical improvement: precordial pains and edema have entirely, and the dyspnea has almost entirely disappeared.

(*b*) *Hypertension and Myocardial Insufficiency with Labile Vasomotor Mechanism.*—In a smaller group of cases in which the highest systolic blood pressure was around 180 mm., with marked diurnal variations of as much as 30 mm., precordial pains following exercise were the main symptoms. Nephritis was apparently not the main or only cause of hypertension; emphysema and myocarditis were the chief pathologic entities. Experimental subcutaneous injections of nitroglycerin in doses of one-fiftieth grain three times a day had a marked temporary effect on the blood pressure and usually on the symptoms; in one instance, the injections were regularly accompanied by sudden relief of precordial pains and by attacks of giddiness. Such cases apparently represent examples of disturbed labile vasomotor mechanism, rather than the hypertension due to marked vascular disease. Nitroglycerin or other vasodilators given at the onset of pain is apt to be followed by great relief. Digitalis, though useful, is not as beneficial as in Group 1.

(*c*) *Uremic Group.*—Headache, nausea, vomiting, varying grades of anemia, attacks of paroxysmal dyspnea and of precordial distress, high systolic and diastolic pressure, nocturnal polyuria and changes in the retina are the cardinal symptoms. Kidney test meals as advocated by Schlayer and others usually show decreased salt, nitrogen and water elimination, and the blood, retained nonprotein nitrogen. The facies in typical instances is characteristically pallid or ashy gray.

The precordial pains are not relieved by nitroglycerin, digitalis or theobromin sodium salicylate. The pains are apparently caused by retained excremental products flowing in the general circulation; their precise nature is not known. Dietetic measures, especially a diet low in protein and rich in carbohydrate, are of most value. When the renal test shows no water retention, ingestion of large quantities of fluids is sometimes beneficial. For the relief of pain, occasional doses of morphin are necessary. On the theory of a tissue acidosis, I have tried the intravenous injection of 500 c.c. of a 5 per cent. bicarbonate solution in two cases. In one, there was marked relief of the precordial pains and other symptoms; in the other, the pain was relieved only for some hours. Glucose solutions given by the Murphy drip or even intravenously may be of value.

2. *Myocardial Insufficiency Without Hypertension.*—The main complaint of these patients, usually men of sedentary habits between the ages of 50 and 60, is slight precordial pain following exertion. The patients look very well preserved. The urine is normal or may contain a slight trace of albumin with a few casts. Physical examination reveals a slight impurity of the first sound at the apex and a soft systolic murmur at the base; there is no evidence of severe cardiovascular disease. The systolic blood pressure is around 160 mm., rarely much higher; there is no edema. The orthodiascopic tracing usually shows a slightly dilated aortal arch with the left ventricle lying broad and sessile on the diaphragm; whether this ventricular contour is due to flabbiness or to hypertrophy, it is impossible to state. It is interesting to note that these patients commonly give a history of having had painful gastric attacks in previous years, with symptoms pointing to gastric or duodenal ulcer. Excellent results have followed the use of digitalis, given at first in large and then in moderate doses and continued intermittently for weeks or months. Small doses of atropin were sometimes added. At the beginning, the patient's activity was somewhat restricted; later, moderate exercise—golf or walking—was advised. Acidulous food and drink were interdicted, and some light form of nourishment between meals was advised. The following is an illustrative case:

Case 2.—J. C., man, aged 60, has for years been careful about his diet, particularly in the avoidance of acids, any indiscretion being followed by epigastric pains. For several months he has complained of precordial knifelike, paroxysmal pains on walking. Examination shows a well nourished man; there is no edema, the urine is normal, the average systolic blood pressure is 160 mm. The orthodiascopic examination reveals a somewhat enlarged left ventricle, the aortal outline somewhat broader than normal. There is an impure first sound at the apex and base. There is no dyspnea or decompensation. One digipuratum tablet was given at first three times daily and then continued in smaller doses for several months. Atropin sulphate, 1/100 grain three times a day, was also prescribed. The patient is now doing his regular work, has taken ocean baths during the summer, and has had no recurrence of precordial pains.

3. *Acute Rheumatic Endocarditis and Rheumatic Endocarditic Exacerbations.*—These cases usually occur in young persons with definite rheumatic histories, with mild tachycardia, with no dyspnea, and with marked auscultatory evidence of valvular disease (usually mitral stenosis). Slight and irregular rise of temperature is the rule. The patients complain not only of the subjective feeling of palpitation but also of "sticking" pains which they localize in the heart

itself There are usually no Head's zones The cause of the rapid heart action and of the precordial pains, even in the absence of abnormal temperature and other rheumatic manifestations, seems due to the irritative effect of fresh exacerbations of endocarditis The best medication is sodium salicylate given in full physiologic doses My routine has been 1 gm hourly until six doses have been given or tinnitus occurs, the dose is then decreased Bromids in moderate amounts and ice bags to the precordium are also helpful Comparative or absolute rest in bed may be necessary for some time

4 *Endomyocardial Disease with General Circulatory Failure*—The fundamental cause of the pains is apparently nutritional disturbance consequent on local circulatory failure in the heart itself Precordial Head's zones or muscle tenderness are often present The therapy for the relief of pain is the same as for the relief of the decompensation This ordinarily means vigorous and long continued digitalis medication, and, for the relief of edema, theobromin and the dietetic regimen already outlined If compensation is restored, cardiac pains and Head's zones disappear

5 *Embolic Infarcts of the Main Coronaries and Their Branches*—It is known that patients who have recovered from cardiac pains have occasionally shown myocardial scars and other changes resulting from old infarcts Huchard,[16] in a summary of 145 necropsies of coronary disease with cardiac pains, found five due to embolism of the artery Recently several cases with necropsy reports of embolic infarcts of the main coronaries have been described, the patients died within a few days or hours with symptoms of intense precordial distress I have observed several cases with intermittent pains lasting days or weeks, in which the symptoms were possibly caused by infarcts or emboli of the smaller coronary branches Curschman[17] in 1891 first described this condition, he reported three cases with necropsies Two patients died some years after the onset of symptoms Both showed localized myocarditis In one there was aneurysmal dilatation confined to one sclerosed arteriole, in the other there was an obliterated coronary branch of the third order The third patient died suddenly and was properly diagnosed *intra vitam*, an embolus was found in a coronary branch of the second order

The history of the three cases that I have observed follows

Case 3—S S (Lebanon Hospital, Dr R Stein's service), woman, unmarried, aged 18, under observation three years, gave a typical rheumatic history She has a marked double aortal lesion and a tremendously hypertrophied heart The Wassermann reaction and frequent blood cultures were negative The systolic blood pressure was 180 mm, the diastolic, 20 mm For months she has had many attacks of moderate irregular fever On several occasions, the attacks were initiated by sharp precordial pains followed by tachycardia or auricular fibrillation, by convulsive twitchings and tremors and by loss of consciousness lasting several days Latterly these attacks have become more severe and were followed by well localized Head's zones

Case 4—X M (Lebanon Hospital, Dr R Stein's service), woman, unmarried, aged 20, gave a history of continued attacks of rheumatism and 'heart trouble" During the last few months she had two attacks similar to but not quite so severe as that with which she entered the hospital There were continued agonizing pain and exquisite tenderness even to the slightest touch over the precordium, and radiating pains to the left shoulder and forearm The temperature was 104 A mitral regurgitant lesion was present There was no edema The breathing was frequent and shallow, apparently owing to the attempt to keep the chest at rest After one week, the high temperature, sharp pain and rapid breathing disappeared, the patient felt comfortable, but precordial pain on firm pressure was still present when she left the hospital

Case 5—A B, man, aged 40, with a double mitral lesion, gave a history of having felt well until three months prior to hospital admission He then had an attack of mania (?) lasting three days Subsequently he developed pneumonia and pleurisy, accompanied by chills and high fever and by attacks of paroxysmal auricular fibrillation After several cultures, a nonhemolytic streptococcus was isolated from the blood During several months of hospital observation, there was a constant sensitive area near the cardiac apex

The characteristic of these three cases was not only the rise of temperature and evidences of active endocarditis, but also the progressive tendency of the disease and the presence of local tender precordial areas Though such characteristics might have been due to the endocarditis alone, the distinct localized sensitized areas and the clinical course make it probable that in addition, acute focal myocarditis was also present From clinical and physical signs and from the progressive and probably bacterial nature of the endocarditis, it seems fair to assume that such focal myocardial changes originated in embolic infarcts of the smaller coronary branches, accidents not necessarily incompatible with life Necropsy findings will of course be necessary to clinch the diagnosis

6 *Cardiac Syphilis*—Cardiac syphilis is an extremely frequent cause of precordial pain The latter is usually substernal, dull, boring and aching It may, however, have the distribution and characteristics of the types already described One may probably ascribe the frequency of these substernal pains to the almost invariable presence of syphilitic aortitis and periaortitis, to the fact that the root of the aorta is surrounded by rich ganglionic and nerve plexuses, and to the varying degrees of aortic dilatability and pressure Head's zones are rare Therapy consists in the treatment of the underlying disease Though salvarsan was originally considered contraindicated in cardiac syphilis, abundant experience has since shown that given first in smaller, later in larger doses, salvarsan combined with the usual mixed treatment is of great and definite value The best routine method of its administration is 0.2 gm injected intravenously every week until 0 6 gm is given, later, full doses may be given, the frequency depending on the cardiac condition Salvarsan sometimes benefits and controls the pains immediately, apparently because it controls the syphilitic inflammatory exacerbations Where the pathologic process in the aorta, the coronaries, or myocardium has reached an extreme degree of permanent destruction, salvarsan or any other treatment can be of little or no avail However, since our present methods of examination are not sufficiently exact to diagnose such conditions, I believe the treatment outlined is indicated in every case of cardiac syphilis except when the patient is moribund Cardiac failure, if present, should receive its appropriate treatment, that is, digitalis, and if necessary, theobromin sodium salicylate

7 *Premature Arteriosclerosis*—This comprises a rare group found in young adults Persistent precordial distress is often present for months Gastric symptoms similar to those of hyperacidity occasionally predominate the clinical picture Physical examination may give no hint of the severity of the pathologic

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[16] Huchard, Quoted by Osler Angina Pectoris and Allied States, p 112

[17] Curschman Kong f Inn Med, 1891, x, 275

process which is attacking the entire cardiovascular sytem, and which finally results in extreme degrees of intimal thickening and of lime deposits throughout the aorta, coronaries, arterioles and endocardium Indeed, such hearts may be pathologically identical with those of persons dying of senility For months there may be no decompensation in the ordinary sense Urine may be normal, the blood pressure not high, the heart sounds may be somewhat distant, and the only indication of severe cardiac disease, besides the precordial pains, may be the presence of an arrhythmia, usually sinus arrhythmia or extrasystole Other occasional symptoms are dyspnea and nocturnal attacks of precordial distress

An illustrative case with necropsy report follows

Case 6—C F., man, aged 42, of athletic build, had been a heavy smoker For four years he had suffered from gastric symptoms resembling hyperacidity, belching was particularly prominent. The gastric contents showed high values for free hydrochloric acid He had frequent attacks of vasomotor disturbances numbness, coldness and pallor of the hands It was only late in the disease, when an attack of hemiplegia occurred, that attention was focused on the possibility of a generalized arteriosclerosis as the underlying disease Though several Wassermann tests were negative, salvarsan and mixed treatment were given, these had no effect on the disease. At necropsy, marked thickening and calcareous deposits were found on all the cardiac valves, the coronaries and their branches showed extreme thickening, the myocardium presented many fibrous patches, the entire heart was somewhat enlarged Spirochetes were not found in the aortal tissue[18] The heart accurately resembled that of a very old person suffering for many years from severe generalized arteriosclerosis and cardiosclerosis

The cause for such presenile sclerosis is still undetermined It is possible that unknown infections and toxemias are etiologic factors In one instance the disease originated within two years of an obscure pulmonary infection which had lasted several months For the present, one may only state that from some unknown cause, the elastic tubing comprising the vascular system becomes prematurely defective and diseased Except digitalis for temporary relief of dyspnea, treatment is of no avail

8 *Senile Arteriosclerosis and Cardiosclerosis*—The clinical picture is usually clear All the palpable arteries are tortuous and thickened, the blood pressure usually high, and the heart somewhat enlarged, the systolic sounds at the apex and right base are impure, the second sound at the right base is sometimes accentuated The precordial pains usually occur with exertion, though sometimes intense, they are more often of mild character They seemingly depend on coronary sclerosis Because of the advanced pathologic changes, the patients are rarely relieved by medication Digitalis and theobromin sodium salicylate sometimes help, the amount of relief apparently depends on the degree of healthy tissue still remaining which may react to medication The patients usually require prolonged periods of comparative rest

9 *Sacculated Aneurysms*—In a general way, the precordial pains depend on the size and position of the aneurysm If large, the pains are those due to pressure on the surrounding structures, as the intercostal nerves, and the ribs If small, and involving the first portion or arch of the aorta, the symptoms are similar in character and etiology to those described under cardiac syphilis (Group 6) The therapy is also the same as that there indicated My experience with wiring and the electric current treatment according to the method of Lusk is limited to two cases In one, after some weeks small, frequent external hemorrhages occurred, due to the perforation of the sac by the end of the wire, the patient finally died of anemia In the other, the patient did not improve during his stay in the hospital, he died suddenly some weeks later, a necropsy was not permitted

10 *Precordial Pains Due to Tabagism*—It is questionable whether the "tobacco heart" should be classified under organic cardiovascular disease Since it has been shown experimentally[19] that intravenous injections of nicotin into rabbits are occasionally followed by aortal atheroma, it has sometimes been assumed that smoking in man may produce similar changes in the vascular system and possibly in the myocardium Direct proof, however, of such damage is still lacking Besides, it has been shown that the rabbit's aorta fairly frequently presents spontaneous atheroma[20] In a number of experiments by Gy in which rabbits were made to inhale smoke for a definite period of time, only a very few were found to have aortal changes, indeed, the proportion was not more than that usually found in the normal rabbit In a study of a large series of hearts of smokers who died from other causes, Brooks[20] found no changes except slight degeneration of the papillary muscle, which he ascribed to the rapid heart action usual in smokers Physiologic experiments have shown that nicotin, the main tobacco alkaloid, is a powerful neurotropic poison which affects particularly the sympathetic ganglia and the peripheral vasodilators In view of these teachings and in the absence of proof of pathologic changes in the human heart due to tabagism, it is reasonable to assume that the frequent precordial pains and distress are caused by disturbance in the coronary circulation and by referred pains from irritation of the sympathetic ganglia

The pains may be dull and aching or sharp and radiating, occasionally, the first premonition may be very sharp lancinating precordial pains radiating to the left shoulder and forearm, and accompanied by unconsciousness For example, a healthy man of 40, a heavy smoker, while running for a train, was suddenly attacked by terrific precordial pains followed by unconsciousness lasting one hour The cardiovascular examination revealed nothing abnormal For weeks after the attack, any slight movement—even turning in bed—brought on pains The patient was finally able to go about and resume his usual occupation At present, six years after his first fainting spell, he feels quite well He again smokes moderately

The most frequent arrhythmia in smokers is extrasystole, usually auricular Other arrhythmias, however, are occasionally encountered Thus I have found two cases of sino-auricular block, a rare arrhythmia, one of auricular flutter, and one of auricular fibrillation due to smoking

Most cases of tobacco pains and arrhythmias cease when smoking is stopped Occasionally pains may occur intermittently for years In such cases, nitroglycerin given regularly or at the time of the pain is of benefit The bromids are of value in helping to control persisting arrhythmias

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[18] I am indebted to Dr M Rothschild for the necropsy report.

[19] Adler and Hensel Jour Med Research xv N S x 229 Gy Paris theses 1908 1909

[20] Brooks Med Rec New York 1915 ci 830 Lucien and Parisot quoted by Vaquez Arch d mal. du cœur 1915, viii 678

B. PRECORDIAL PAIN OF EXTRACARDIAC ORIGIN

1. *Gastric Disturbances.*—Patients with gastric disturbances, particularly those in whom epigastric distress is marked, are apt to suffer from referred precordial pains. The clinical picture is that of hyperacidity, or of gastric or duodenal ulcer. Belching, loud and explosive in character, is usually a prominent symptom. The precordial pains are commonly sharp, neuralgic, fleeting and inconstant in character; their distribution is usually along the fourth and fifth intercostal spaces. Pain referred to the left shoulder is rare. Corresponding to the anterior distribution, there may be a similar area posteriorly. A precordial Head's zone is unusual, its presence and area of distribution inconstant. There may be correlation between the gastric symptoms and precordial pains, particularly when "hunger pains" and belching are marked. There is no decompensation or dyspnea. When the gastric symptoms are stormy, extrasystoles may be present. Treatment is naturally directed to the underlying disease. I have found most benefit from atropin given in full physiologic doses three times a day before meals, and from an antacid powder containing equal parts of sodium bicarbonate, magnesium oxid and oleosaccharated peppermint given in half teaspoonful doses after meals; appropriate diet given frequently and in small quantities is important. As already noted, gastric symptoms may accompany cardiac disease, so that correlation and study of all clinical data are necessary for a correct diagnosis. Unless the extrasystoles are subjectively annoying, they require no medication; otherwise they may be partly controlled by bromids.

2. *Precordial Pains from Esophageal Disease.*—Carcinoma, syphilis and diverticula are the usual organic causes of referred intercostal and precordial pains. In some cases, organic disease is absent; the symptoms are due to esophageal spasm, especially of the lower end of the esophagus, or to ulcerations affecting the surrounding structures. The usual symptoms are an uncomfortable, conscious gulping effort on swallowing solids or fluid, often accompanied by sharp pains referred to the lower sternum, and radiating to the precordium or even to the upper and lower extremities. Such symptoms are occasionally mistaken for those due to aortic aneurysm, and the difficulty in swallowing, to aneurysmal pressure on the esophagus.

An illustrative case with therapy follows:

Case 7.—H. G. (Har Moriah Hospital), man, aged 48, tailor, stated that for seven years he had choking sensations in the larynx and severe substernal pains on attempting to swallow solid food. These pains occasionally radiated to the head, arms and legs. The symptoms became progressively worse. The neurologic and physical examination revealed nothing abnormal; the fluoroscope showed a normal aorta. Wassermann reactions of the blood and spinal fluid were negative; the stools, urine and gastric contents were normal. Roentgenograms showed a pouchlike dilatation of the middle part of the esophagus. An esophageal bougie was arrested opposite the middle of the sternum. For purposes of dilatation, bougies of increasing caliber were passed. At first semisolid, later solid food was given. Atropin sulphate, $\frac{1}{100}$ grain three times a day, was administered. The pains gradually subsided and finally disappeared. The patient was taught to pass a stomach tube on himself; this he did for some weeks after he left the hospital. An examination months later showed that esophageal symptoms and pains had disappeared, and that the patient had increased considerably in weight.

3. *Precordial Pains Accompanying Crises of Acute Catarrhal Pulmonary Affections.*—Such attacks of precordial pain are common with the crises of influenzal bronchitis, especially when sharp critical sweats are present. Head's zones in the left nipple region, and arrhythmias (especially sinus arrhythmia and extrasystoles) are frequent, a combination superficially suggestive of toxic myocarditis. The symptoms, however, last only a few days; except for pain and arrhythmia, the heart is normal; there is no decompensation or edema. Examinations made months or years later have shown that the cardiovascular system had not been damaged.

The following is an example:

Case 8.—I. F., physician, aged 43, never had any cardiac complaint. Two weeks ago he contracted pharyngeal and bronchial grip. There were critical defervescence, sharp sweats, an irregular pulse, and sharp stinging pains in the left breast. The patient feared that he had an infectious myocarditis and carefully avoided every unnecessary motion. Examination revealed a small Head's zone confined to the left nipple region, and an arrhythmia which polygraphic and electrocardiographic tracings showed to be due to auricular extrasystoles. Otherwise the cardiovascular symptom was normal. The patient was reassured, told to get out of bed, and given atropin sulphate, $\frac{1}{150}$ grain three times a day before meals, and a dose of bromids at night. He was sent to the country and advised to exercise as much as he chose. He was soon able to walk several miles daily. Within one week the extrasystoles and pain disappeared, and have not since returned.

4. *Precordial Pains Accompanying Vasomotor Disturbances at the Menopause.*—Women at the climacteric with marked vasomotor disturbances (flushes, heat flashes, cold extremities, etc.) frequently have persistent precordial pains without evidence of organic disease of the heart or neighboring organs. Such pains are possibly evidence of vasomotor circulatory disturbances in the heart itself. The patients rarely react well to medication. Bromids and small doses of atropin and nitroglycerin are of most value. Ovarian tablets are occasionally helpful. Hurry and excitement should be avoided.

5. *Precordial "Neuralgias" of Unknown Origin.*—Under this heading is grouped a small number of persons, usually young and apparently healthy and vigorous, without vicious habits, with no rheumatic manifestations, in whom continued and frequent examinations of the heart and other organs reveal nothing abnormal. Occasionally, sudden explosive belching or singultus is present. In one instance, smoking some years previously might have been an etiologic factor. The pains are apparently quite haphazard in their onset and duration, and defy medication and therapy.

In this group may also be placed those female patients who complain of indefinite chest pains and distress, and who, from other manifestations, apparently suffer from a functional disorder of the internal secretory organ or organs. They are occasionally relieved by medication aimed at substituting the presumed secretory deficiency.

6. *Pott's Disease, Mediastinal and Spinal Tumors, Tabes, Intercostal Neuralgia and Myalgia, Pleurisy and Pericarditis.*—These are among other extracardial conditions and diseases which may produce precordial pain. Their discussion is not within the scope of this paper.

The etiology and types of precordial pains here described are admittedly incomplete. Only those most frequent and clinically important have been discussed, and their correlation with intracardiac or extracardiac disease described It is recognized, also, that the various groups sometimes overlap In organic cardiovascular disease, I have endeavored to estimate roughly the extent and nature of the pathologic damage, and to gage, if possible, the amount of remaining healthy tissue which may be favorably influenced by therapy Thus studied, one may obtain a basis for rational therapy, with its prospects and limitations The postmortem specimens of advanced coronary, endocardial and myocardial disease, with the history of precordial distress during life, should not blind us to the fact that some of these patients have lived many years despite their diseased organs, and that other patients with equally damaged hearts have not suffered from precordial distress during life

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CERTAIN ASPECTS OF INFANTILE PARALYSIS

WITH A DESCRIPTION OF A METHOD OF MUSCLE TESTING *

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This paper contains the account of a combined physiologic and orthopedic study of certain phenomena of infantile paralysis The whole matter owes its inception and present status to the State Board of Health of Vermont, which by the generosity of an anonymous donor was enabled to finance a scheme for the study and treatment of the disease quite unprecedented in its scope and thoroughness The entire work has been conducted under the direction of the board, which has borne the whole expense of the studies in Boston and Vermont

The inquiry was started in the late autumn of 1914, the Rockefeller Institute through Dr Simon Flexner taking charge of the epidemiologic end of the inquiry and opening a laboratory in Burlington, while to one of us (R W L) was assigned the therapeutic side of the problem Later, for reasons to be stated, the physiologic department of Harvard University was asked to assist in the study, and a system of muscle measurement was devised by one of us (E G M)

This system of measurement was put in use in the early summer of 1915 in the orthopedic department of the Children's Hospital, and later used by us in a trip to Vermont made in July, 1915, for the purposes of treatment So much new light was thrown by its use on certain phenomena of the disease that two subsequent trips to Vermont were made by one of us (E G M) in August and September to make observations on patients under treatment

The material available for study is as follows At the first series of Vermont clinics in January and February, 1915 235 patients applied for treatment, and at the second series in July, 145 From these figures should be deducted seventy-six seen at both clinics, making 304 patients seen and prescribed for in Vermont One hundred and one patients from the orthopedic clinic of the Children's Hospital, Boston, and from the private practice of one of us have been added to the Vermont material for purposes of study The results of the analysis of cases on the first trip have been published,[1] and a short preliminary report on the method of muscle testing has been made [2]

In the present paper we first discuss the reasons for the use of a muscle test, second, describe the muscle test, and third, present conclusions obtained by the use of the muscle test in the cases mentioned

The general thesis of this paper is as follows The observations in about 300 cases in Vermont have shown that in all cases, old and recent, infantile paralysis has been found in most muscular groups not to be a paralysis in the sense of a complete loss of power, but a weakening of these muscles Now weakened muscles can, as a rule, be made stronger by judicious exercise, just as can normal muscles Our therapeutic problem, therefore, requires the closest possible study of such muscles and of the therapeutic means by which their individual power may be increased It is a very important matter to the parents of a child with a gastrocnemius muscle reduced to only 20 per cent of its normal power whether this muscle ultimately returns to 40 per cent or 90 per cent of its normal strength

WHY A MUSCLE TEST WAS DESIRABLE

The original study of the Vermont cases, in which the hand was used to estimate voluntary contractile power in the individual muscles, showed in 150 cases of a few months' duration that partial paralysis was more common than total in the proportion of 2 5 1 (1,036 partial to 416 total paralyses) In the eighty-six cases of the 150 available in July for closer study by means of the muscle test, there were found by this method 111 totally paralyzed and 958 partially paralyzed muscle groups, a proportion of about 9 1 It is evident, therefore, that the bulk of any study will be in cases of "partial paralysis"

At the outset of the Vermont work, muscles were classed as normal, partly paralyzed or totally paralyzed The first and the last class were clear enough, but in the "partly paralyzed" division we had to group muscles which were just short of normal and muscles which showed only a flicker of movement on attempted contraction Between these two widely separated conditions existed every degree of disability, yet one must put them all in one class Exact study of the phenomena under these conditions was impossible

Again, in the matter of treatment some scale of measuring improvement or the reverse was urgently needed "Impressions" that electricity of one kind or another, or rest or exercise were beneficial have filled literature, unsupported assertions, marvelous cures, fantastic treatments have too often been advanced on the slenderest of grounds With the realization that partial paralysis was the usual form of affection, it became imperative to have some scale by which to work out what should be a precise and improved treatment The muscle test offers a practical quantitative scale by which the effects of modifications of treatment may be studied week by week and month by month

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* Report to the State Board of Health of Vermont

[1] Lovett R W The Treatment of Infantile Paralysis Preliminary Report Based on a Study of the Vermont Epidemic of 1914 THE JOURNAL A M A June 26 1915 p 2118

[2] Martin E G and Lovett R W A Method of Testing Muscular Strength in Infantile Paralysis THE JOURNAL A M A Oct 30 1915 p 1512

THE MUSCLE TEST

The muscle test devised consists of estimating the strength of the various muscular groups by means of spring balances Standard positions for each group are chosen, so that the same position is assumed on consecutive observations It is easier to induce children to pull against resistance, from a fixed position, than to get them to initiate a movement, so that the strength test is based on the patient's power to hold a position against the pull of a spring balance, and the resistance registered on the balance in the standard position represents the muscular strength The pull is exerted from a sling attached to the member to be tested, and the line of pull is at right angles to the long axis of the limb The balance is hooked into the sling, and the other end held by an assistant Two tests are taken, and the larger reading recorded The results have been surprisingly accurate, and consecutive readings on the same patients have been used to check up this accuracy

TABLE 1—DETAILED TECHNIC OF MUSCLE TESTS

Muscle Group	Subject	Sling	Assistant	Operator
1 Plantar Flexion	Supine on table legs straight foot in plantar flexion pl in padded board 6 by 2½ inches under sole	About ball of foot upper edge at proximal margin of toes	At subject's head, reaches along body to balance hooked to sling	Holds ankle lightly with finger tips notes yielding of joint by touch, reads scale
2 Dorsal Flexion	Supine legs straight, foot in extreme dorsiflexion	About dorsum of foot position as in 1	At subject's feet, reads scale	Holds ankle firmly heel off table notes and calls instant of yielding
3 Inversion	As in 2 legs well apart, foot in extreme inversion	About ball of great toe	At subject's side reads scale	As in 2
4 Eversion	As in 3, foot in extreme eversion	About outer margin upper edge at middle of least toe	At opposite side from 3 reads scale	As in 2
5 Adduction	As in 2 both legs well over at side of table, toes kept vertical	In hollow above external malleolus†	At subject's side	At subject's feet, holds leg lightly reads scale as leg comes in line with axis of body
6 Abduction	As in 2, legs apart	In hollow above internal malleolus	At opposite side from 5	As in 5
7 Hip Extension	On side axis of pelvis held vertical by brace or additional assistant, uppermost leg in extreme extension knee straight	In hollow back of knee	In front of subject	As in 5
8 Hip Flexion	As in 7 leg in extreme flexion at hip knee flexed to right angle	Over front of leg just above knee	At the subject's feet Braces subject by holding lowermost leg firmly against table	Faces subject supports leg reads scale when leg is at right angle to axis of body
9 Knee Extension	Prone leg flexed at knee	In hollow above malleoli	At subject's head	At subject's right side right hand holds upper leg firmly on table, left hand holds sling in place and extends lower leg 12 15 degrees beyond right angle reads scale as in 8
10 Knee Flexion	Prone * leg flexed well beyond right angle	As in 9	At subject's feet	As in 9 except that leg is flexed beyond right angle
11 Pectoral	If legs normal standing if weak sitting on rigid stool arm across front of body elbow straight hand in normal pronation	Immediately above elbow joint	At subject's side pulls horizontally outward and backward Angle with sagittal plane 45	Behind subject, supports body with arms reads scale as arm comes in line with axis of body
12 Latissimus Dorsi	As in 11, arm across back	As in 11	As in 11 except that pull is outward and forward	In front of subject, otherwise as in 11
13 Anterior Deltoid	As in 11 arm thrust outward and forward	As in 11	Behind subject pull inward backward and downward	As in 12
14 Posterior Deltoid	As in 11 arm thrust outward and backward	As in 11	In front of subject pull inward, forward and downward	As in 11
15 Forearm Extension	Supine on table arm at side close to body elbow flexed nearly to right angle	At wrist	At subject's head	At side holds upper arm firmly on table with one hand sling and forearm in position with other, reads scale when forearm is at right angle with upper arm
16 Forearm Flexion	As in 15, elbow in extreme flexion	At wrist	At subject's feet	As in 15
17 Wrist Extension	Sits on edge of table elbow flexed at right angle, wrist in extreme extension	Gauze sling over knuckles thumb not included	In front of subject reads scale at call of operator	Holds subject's wrist firmly notes yielding of joint
18 Wrist Flexion	As in 17 wrist in extreme flexion	Gauze sling about palm close to base of fingers	As in 17	As in 17
19 Finger Extension	As in 17 palm supported firmly by operator or by upright brace fingers in extreme extension	Gauze sling about distal articulations of first phalanges	As in 17	As in 17
20 Finger Flexion	As in 19 fingers flexed to right angle forearm firmly supported	As in 19	As in 17	As in 17 notes yielding of joint by light pressure of fingers against back of hand
21 Thumb Adduction	As in 17 palm down fingers extended thumb in extreme adduction, slightly flexed	At distal articulation of first phalanx	As in 17	Holds subject's wrist with one hand, fingers with the other calls when thumb appears from beneath hand
22 Thumb Abduction	As in 17 thumb in moderate extension	As in 21, passed beneath hand to balance	As in 17	As in 21, calls when thumb is drawn to side of hand

* Adults sometimes have a cramp in knee flexors This can be avoided by taking Test 10 with subject lying on side

† If other thigh muscles are severely affected, Tests 5 and 6 may be checked by tests with sling just above knee Strength ratio should be 2 1

From the unaffected limbs of patients, and from normal children and children from the scoliosis clinic, there has been constructed a table of normals for both arm and leg for children from 4 to 18, with an additional series for adults This table has shown that the general relation of the strength of the various muscles in children is surprisingly constant, and that a marked deficiency of a muscular group in a child elsewhere paralyzed is very suggestive of paralysis

The muscle groups tested are twenty-two in number for each side in the leg, plantar and dorsal flexion and inversion and eversion of the foot, flexion and extension of the knee, adduction, abduction, flexion and extension of the hip (ten in the lower extremity), in the arm, the pectoral, latissimus dorsi, anterior and posterior deltoid, flexion and extension of the elbow, flexion and extension of the wrist, flexion and extension of the fingers, and adduction and abduction of the thumb (twelve in the upper extremity) We have not been able to devise reliable methods for testing the shoulder rotators or back or abdominal muscles

The technic is given in Table 1 At first, attempts were made to use clamps, etc, to hold the limbs, but with these it was possible to obtain leverage and thus to vitiate the observations The flexibility afforded by holding the balance in the hand has been of great advantage

In the presence of fixed contractions, pure muscular movements cannot be elicited reliably, and the readings in such regions must be accepted with care

In case extremely weak muscles are to be tested, gauze loops about 3 feet long are used for suspending the limb In all such cases the positions most favorable for the function of the individual muscles are taken, in many instances differing from the standard positions given in Table 1 Tests on extremely weak muscles are, however, not so reliable as those on stronger muscles

CONCLUSIONS DRAWN FROM THE USE OF THE MUSCLE TEST

The following observations rest on studies on 177 patients, on whom 13,000 observations in 400 series were made, forty-four different muscular groups, twenty-two on each side of the body, being available for study

Distribution of Paralysis—The muscular affection is much more widespread than ordinarily supposed thus corresponding closely to the pathology as observed of late years It is rare to find one muscular group affected without manifestations elsewhere, for example, we often class a case as gastrocnemius paralysis, but rarely in our observations (two in 177) has this been found to exist alone, other muscles nearly always being weakened When one leg is involved it is common to find some weakening of some of the muscles of the other leg When both legs are affected, some arm muscles are often involved This fact is well to bear in mind in formulating treatment

In thirty-two cases of the series, taken consecutively from the files for this analysis, the following data were observed

Ten cases by manual examination had been classed as having only one leg affected, by the muscle test nine of these showed weakness of muscular groups in the other leg Of the other twenty-two cases, four had obvious paralysis of all four members In the remaining eighteen cases of paralysis of more than one limb, no new paralysis was revealed by the muscle test in eight, while in ten, unsuspected involvement in another limb was found

Distribution of Total and Partial Paralysis—Table 2 shows that there is a predilection on the part of total paralysis for the lower leg In the Boston series the cases were of longer duration, of a severer type, many requiring operation, but the ratio is not widely different in the two classes This confirms the observations made in the 150 cases seen on the first trip, where the peroneal and anterior tibial muscles showed of all muscles the largest incidence of total paralysis

Partial paralysis may be classed as severe (one third or less of normal power) or moderate (one third or more of normal power) Two classes of cases are available for this analysis, one the Vermont group, mostly affected in 1914, and the other the Boston group, mostly affected before 1912, being largely hospital cases awaiting operation

The observations given in Table 3 extend the findings of the first study of the Vermont cases, that paralysis is severest in the foot and diminishes toward the hip, and is severest in the shoulder and diminishes toward the hand In that paper, however, one dealt with the relation of total to partial, here another class is available, and the ratio of severe to moderate bears out the same fact in two widely different classes of cases

Paralyzed Muscles Should not Lose Power—In the period covered by our observations (two months in the Vermont cases and longer in some of the Boston cases), it has appeared that the strength of affected muscles tends on the whole to remain stationary or to improve, and that a loss of strength is not to be expected, and when it occurs should be investigated

TABLE 2—MUSCULAR GROUPS SHOWING TOTAL PARALYSIS

	Vermont	Boston
Below knee	74 (82 per cent.)	87 (82 per cent.)
Elsewhere	16	19
Total	90	106

This statement rests on the study of forty-six cases of from one to five years' duration (three from 1911, one from 1913, forty-two from 1914) tested at an interval of two months or more, 549 affected muscular groups were studied, 356 being under treatment by muscle training, and 193 not under treatment Seven per cent of the muscles under treatment showed a loss of power in this interval (twenty-five muscle groups in thirteen cases) In nearly all instances this loss was to be accounted for by conditions known at the time of observation, such as fatigue, ill health, overuse, etc In the muscles not under treatment there was some loss of power in 24 per cent (forty-seven muscle groups in twenty-one cases) In a large proportion of these, the conditions were such as to explain this observation

TABLE 3—DISTRIBUTION OF MUSCULAR GROUPS SHOWING PARTIAL PARALYSIS

	Vermont		Boston	
	Severe	Moderate	Severe	Moderate
Lower extremity				
Leg	115	109	203	161
Thigh	89	61	101	76
Hip	108	177	117	168
Upper extremity				
Shoulder and arm	91	87	58	80
Forearm and hand	58	89	18	66

Overfatigue and its Detrimental Effects—The data as to the effect of muscular fatigue from overuse, overexercise therapeutically given and overmassage appeared to be important, and certain clinical observations were formulated after the first series of clinics [1] A quotation follows

> It has been repeatedly observed in my private practice that power might begin to return in a very faint degree to a muscle while under muscle training and that with care this power would steadily increase but if that muscle were exercised even very gently every day that power would diminish or disappear, so that we exercise such muscles only once in three days at the outset, increasing the work most carefully
>
> Illustrative cases seem to me to show that much smaller degrees of overuse may be deleterious than is generally supposed Probably any of us would agree that gross and persistent overuse of partly paralyzed muscles would be undesirable, but it seems to me reasonable that in the early stage of returning power we should be exceedingly careful

in the use of muscles in walking and in the use of heavy and prolonged massage, much more careful than we are at present, if I may judge the practice of others by my own previous methods

This matter was confirmed and made more definite by the muscle test Illustrative cases follow

Case 1—A boy of 5, with the onset in 1914, was having at the time of the first test one and one-half hours of massage and one hour of muscle training daily This was changed, and he was given one hour only of gentle muscular exercise, and the second observation showed a substantial gain of rength in all affected muscles, an illustration of the effect of o much treatment

Case 2—A boy with the *onset in 1914, in July showed* partial paralysis of the left arm He then began to milk ten cows daily, and in a month had lost strength in all of his left arm muscles except the biceps and triceps, which had gained slightly The loss was greatest in the muscles of the forearm, which were of course those most exercised in milking, an illustration of the effect of overuse of the muscles as a cause of loss of power in the overused muscles

In this matter of the study of the detrimental effect of fatigue and the beneficial effect of proper muscular exercise lies apparently one of the most important uses of the method We need to know the dose of the remedy which we are using

Variations in General Muscular Strength—Children are subject to variations in muscular strength at different times, the whole scale of readings for both normal and affected muscles being sometimes decidedly higher or lower than their usual values, but the raising or lowering of the whole scale while the relative strength of the muscles remains practically the same is apparently dependent on general conditions and does not affect the question of paralysis During the great heat of September, 1915, a decided falling off in muscular strength was noted in several cases whose normal scale was known, and observations were abandoned until it became cooler

Abortive Paralysis—That cases of so-called abortive paralysis are often really cases in which paralysis exists, but is too slight to be detected by the ordinary examination, seems likely Two observations bear on this point

In one family in Burlington, three children were similarly affected at about the same time One showed a frank paralysis, and the other two did not, and were classed as abortive cases and showed nothing abnormal on the regular examination The muscle test revealed in one of these a decided weakness of the gluteal muscles of one leg, showing that the case was classed as abortive only because the regular examination which was made was not delicate enough In the other case, no departure was shown from the normal scale for a child of that age This must therefore pass as a purely abortive case

The method has probably a diagnostic value in detecting in cases which have been regarded as possibly abortive a decided local muscular weakness too slight to be detected by the ordinary manual examination

Effects of Treatment—Muscle training as contrasted with simple massage showed that after a period of a few weeks, that is, when the treatments have been given for a sufficient time to demonstrate their effect, muscle training is superior to massage This became evident after the third series of tests, and not after the second series, but a final conclusion cannot be presented on such short observation

Muscle Training—As to the effects of treatment, in the time available for observation the following facts appeared The chance of improvement in affected but not totally paralyzed muscles under expert treatment by muscle training was about 6 1, under supervised home exercises 3 5 1, under home exercises without supervision 2 8 1, while untreated affected muscles in these patients showed an improvement ratio of 1 9 1 These patients were nearly all affected in 1914, and represent cases at the end of the first year They are all from the Vermont Group and were treated there

Spontaneous Improvement—The ratio of 1 9 1 chance of improvement in untreated muscle groups is apparently partly spontaneous improvement, but this question is so very important in the matter of prognosis that it demands further analysis, because in most of these patients other muscles were being treated, and the figures to be quoted indicate that untreated muscles are favorably affected by the systematic exercise of other muscles There were available in the Vermont series only seven patients on whom repeated muscle tests were made who were not receiving treatment because the prescription had not been followed by the parents

In these patients, in thirty-seven affected muscle groups there was improvement in nineteen and none in eighteen, a ratio of 1 1 of purely spontaneous improvement These were all from the 1914 epidemic The conclusion from this small group is that the treatment of one set of muscles by muscle training has a stimulating effect on muscles not under treatment

These facts may well give us courage to undertake a more vigorous treatment in late cases Knowing that at the end of one year spontaneous improvement is by no means at an end, perhaps we may find that it extends much later than this when our observations have extended These observations on the recuperative power in the affected structures and how long it lasts appear to be of much practical importance

Recovery of Power in Total Paralysis—The possibility of improvement in muscles totally paralyzed at the end of one year is also of much therapeutic importance The following facts have been observed Of forty-four totally paralyzed muscles at the end of one year, 48 per cent (twenty-one) developed demonstrable power after two months of treatment Of forty-four totally paralyzed muscles not receiving treatment, 27 per cent (twelve) developed demonstrable power at the end of two months, which shows again that spontaneous improvement has by no means stopped at the end of a year

An observation shows how great this improvement may be and how late it may be obtained A patient affected in 1911 was under treatment for two months, beginning last July, by supervised home exercises His unaffected muscles in this time gained 70 per cent, while his affected muscles gained this and 400 per cent more (470 per cent) These muscles were severely affected This great gain at the end of four years by simple home exercises and the avoidance of fatigue is, it seems, most unexpected and encouraging

TYPES OF THERAPEUTIC EXERCISE

The usefulness of the method in throwing light on the value of different treatments is illustrated by the following observation

It was asserted by an English writer that the most helpful exercise in infantile paralysis was to pull against the fully contracted muscle rather than to make resistance against the contracting muscle, technically that an eccentric exercise was physiologically more sound than a so-called concentric one One observation showed that this advocated type of exercise was apparently harmful A young girl with a moderately affected quadriceps muscle was given exercise of this newer type for two weeks, and lost 12 5 per cent of power, the regular exercises were then given for four weeks with a development of 50 per cent of power It was not felt that it was proper to repeat this observation on other patients, so that it must remain only as an unproved suggestion

OBSERVATIONS IN PRIVATE PRACTICE

The private patients under observation from the practice of one of us, some of whom have been under observation since June, 1914, offer good material for study, as being under the most continuous observation Instances of the practical applicability of the method in these cases are as follows

Case 3—A girl of 10 had been affected since 1906, and when she came for treatment in 1911 she showed a mild equinus deformity of the right foot. After various attempts to stretch this it was operated on in January, 1915, by tenotomy, but the child, although improved, still walked poorly Eight months later, in October, 1915, a muscle test showed decided weakness of the thigh flexors and extensors and an increasing weakness in the dorsal flexors of the right foot which were getting weaker as the plantar flexors increased in strength In October, 1915, exercises addressed to these muscles were prescribed, although the child had previously been doing exercises In six weeks the mother reported that the progress since October had been far greater than at any time in the affection, and that the child could now "skip" on one foot and used herself very differently than she had ever done before, and the lameness had become very much less An arm weakness had also been identified by the muscle test, for which exercises had been given with much benefit, an instance in which greater precision of treatment had demonstrated its greater usefulness

Case 4—A man of 22 was referred in the fourth week after his onset He had involvement of the right leg and arm, walked with a limp and could not raise his right arm The left arm appeared to be slightly weakened Examination by the usual method showed extensive weakness in the left arm, very little power in the right deltoid, and a general involvement of the right leg His right arm was put in a sling he was cautioned against much walking and the use of the arm, and weekly muscle tests were made, showing a general slow gain, but no therapeutic exercises were allowed at first At a test, October 4 an increase of 50 per cent. in the power of the right gastrocnemius muscle was observed, and on questioning it was found that he had been daily rising on his toes as a trial This seemed to indicate that he was ready for therapeutic exercise, on which he then began with success The test October 26, showed a loss of 25 per cent. of power in the wrist and finger flexors of the right hand, and it was found on questioning that he had been writing too much This was stopped and on the following week a return of the former power was found in these muscles an instance of the information afforded by the test in directing routine and defining treatment.

Case 5—A girl aged 8½ affected in 1913 with extensive paralysis of both legs, was walking with splints and crutches, and her muscle power was on the increase under daily muscle training Nov 18 1915 there was a general loss of power in the legs On questioning it was found that relatives had been visiting the family, and the child had been doing much more than usual an instance of the deleterious effect of local and general fatigue.

These private patients are all tested at regular intervals varying upward from one week and it has been found that on the whole all are gaining in power and that the failure to gain in a special group or in general can be explained Muscles gain and lose rapidly a week often showing marked changes As a rule, the muscles receiving the most attention gain fastest, and treatment is constantly to be modified in response to changes in the muscle readings The more precise treatment is more satisfactory to those in charge of the case, and we believe of greater benefit to the patient

CONCLUSION

No one realizes better than ourselves how very incomplete this report is, but we are not justified in making it otherwise There has not been a sufficient interval since our first observations to warrant us in making sweeping assertions as to the value of different treatments We have under way, however, a series of observations on the effect of the different therapeutic measures and on the effect of braces, and plaster of Paris in operative cases These will in due time be presented, and meantime we only desire to call attention to a method of observation which we believe to be useful and to certain general conclusions which we believe to be sound

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ACTION OF PITUITARY EXTRACT

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In a recent article Shamoff[1] called attention to a generally unrecognized property of pituitary extracts In various instances in which such extracts were applied to isolated segments of rabbit intestine, not the usual stimulation but a marked depression was noted This was obtained from various preparations, but most constantly from a saline extract of gland substance desiccated in vacuo at room temperature This result is in contradiction to the commonly held view that such extracts directly stimulate smooth muscle

Recently as a class exercise in our laboratory, the effect of intravenous injections of extracts of pituitary gland on the intact small intestine was investigated Dogs were anesthetized and the dorsal portion of the spinal cord destroyed A segment of the intestine was immobilized (Trendelenburg technic), and a recording lever attached In five cases out of six, a clean cut depression of tonus and peristalsis occurred Commercial "pituitrin" was the extract used In three instances saline extracts of old preparations of desiccated gland gave similar results

In view of the frequent use of such extracts clinically as peristaltic stimulants, this depressant effect should be recognized This inconstancy of behavior should be further investigated The possibility is suggested that it may be correlated with some recent change in the process of preparing the extracts for market In any case each lot of the product should be tested by the manufacturer and its effect on peristalsis stated on the label of the container

It is possible that the failure in some instances clinically to obtain the supposed diuretic effect from pituitary extract may have a similar explanation

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[1] Shamoff V A Concerning the Action of Various Pituitary Extracts on the Isolated Intestinal Loop Am Jour Physiol 1916 xxxix 268

AN UNUSUAL CASE OF MESENTERIC TRANSPLANTATION

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At operation a case will occasionally be encountered in which the ordinary methods of covering peritoneal defects prove unsuitable Therefore a further practical experience should prove of interest to the profession Even in the largest surgical clinic with which I am acquainted, the Eppendorfer Krankenhaus in Hamburg, Germany, during my three years' work there as assistant, no case presented itself in which the method to be described seemed indicated, nor have I seen one anywhere else

In 1876 Tietze,[1] advised the use of omental grafts to reinforce end to end entero-anastomoses, to close small wounds on the stomach surface, and to cover necrotic patches which he had experimentally produced on the surface of the intestines

Senn[2] in 1888 recorded his experiments showing that grafts of omentum applied to the bowel may retain their vitality, becoming adherent within eighteen hours, and are nourished with newly formed blood vessels within forty-eight hours

Ammann,[3] I believe, also recommends the use of omental grafts for the same purpose From experimental evidence he is convinced that almost any part of the peritoneum may be used in covering peritoneal defects He advises the use of the sigmoid to close the open space between Douglas' sac and the bladder after hysterectomy whenever a simpler method of closure is not feasible

A study of the literature shows that there are many suitable cases for the use of omental grafts and that although substantial differences of opinion prevail among authors concerning the danger of the formation of adhesions between the grafted organ and the adjacent peritoneal surface, the graft is generally considered a valuable means of protecting the abdominal cavity from intestinal leakage in cases in which an ideal Lembert suture cannot be made Among the many articles on this general subject I have found no mention of the method to be described, and which seemed to me a valuable aid in an unusual and trying case

REPORT OF CASE

History—The patient was a single woman aged 35, whose chief complaint was a severe, chronic constipation All symptoms seemed to be dependent on this trouble She had had tenderness in the right iliac fossa for several years and several slight attacks of appendicitis Through the very thick abdominal wall nothing definite could be palpated The constipation was often accompanied by pain and tympanites There was general lassitude with rapid and feeble heart action Heart sounds were not clear, but there were no definite murmurs, though since childhood she had had severe attacks of rheumatic fever There was a chronic bronchitis Because of metrorrhagia she was operated on four years previously for a multiple uterine fibroid Since then menstruation had been late and the flow scanty The conditions to be described were probably overlooked at the former operation Although the removal of the appendix had been advised, it was not removed because of the patient's bad condition during anesthesia

Operation—The abdomen was opened by a median hypogastric incision in the scar of the former operation The cecum and proximal colon were not movable The omentum was irregularly thickened and adherent to the abdominal wall and intestines After prolonged search the appendix was found imbedded in a mass of omental and intestinal adhesions It was excised with ligation and cauterization of the stump, an invagination not being feasible On further search a very thick adhesion was encountered between the ileum and peritoneum over the right sacro-iliac synchondrosis and another one between two loops of small intestine Finally, a Meckel's diverticulum was found attached to the free border of the ileum, with evident signs of chronic inflammation of its terminal portion yet floating free in the abdominal cavity

The diverticulum was about three times as large as the normal appendix, with a very slight constriction at its intestinal attachment It was determined to remove it as one would an appendix, so after clamping and ligating in the usual way, the stump was invaginated with a purse-string suture When this was tied, it was found seriously to diminish the intestinal lumen so that an obstruction was to be feared To avoid this complication, the purse-string suture was cut off and to cover the stump and the raw surface produced by the suture, I dissected a piece of the mesentery between two veins as large as a silver half dollar This was sutured around its border with interrupted sutures covering the denuded area on the bowel, and so placed that the raw surface of the transplant was in contact with the defect on the intestine A few sutures united the edges of the denuded area on the mesentery The operation had then to be terminated because the patient's general condition had been bad throughout the anesthesia The abdomen was closed without drainage There was a slight rise of temperature following the operation, but nothing otherwise unusual throughout the following week Bowels were moved on the third day with a saline cathartic Recovery was uneventful and the patient was out of bed on the twelfth day

I wish to emphasize that my method of covering the raw surface was quite different from the two usual methods, that is, suture of omentum to raw surface, and second, torsion of the gut on its long axis with suture to an attached flap of the mesentery Both methods seemed to me liable to produce adhesions of this segment of gut in a patient in whom already the peritoneal surfaces were much altered and organs fixed It seemed to me that a transplant rather than a flap of mesentery would offer the best method of surmounting the technical difficulties, and the postoperative course of the patient has confirmed this conclusion

Let me add further that when I performed this operation I was not familiar with the work of the authors previously mentioned I was, however, familiar with Tuffier's work on ovarian transplantation and Carrel's work on transplantation of the kidney in a dog

The country in which I live is the smallest of American republics and is at the beginning both of its general and scientific development, and is distant from any medical center, so that medical and surgical progress must be rather slow for a time, at least I hope that this case of successful transplantation of mesentery may be considered worthy of publication

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Sewage Disposal—The Arkansas supreme court recently rendered a decision in a suit for damages for injury to property by the presence of a septic tank and drainage from it, which polluted a stream flowing through the plaintiff's land The court held that the sewer district was liable for the amount by which the value of the plaintiff's land was depreciated by reason of the construction and operation of the septic tank, but that no damage could be recovered because of the acts of employees of the municipality in unnecessarily flushing the tank—*Public Health Reports*

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[1] Tietze Beitr z klin Chir, 1876
[2] Senn, N Ann Surg, 1888
[3] Ammann Ztschr f Chir, 1906

DOUBLE INDUCED PNEUMOTHORAX

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OAKLAND, CALIF

Three forms of induced pneumothorax may be practiced

1 Unilateral pneumothorax, the inflation of one pleura This is the common form of the operation, and frequently establishes a cure even when both lungs are affected

2 Alternate pneumothorax, the inflation of one pleura for a time, and then after the gas is absorbed, inflation of the opposite pleura This method succeeds in some cases that are not cured by the first method

3 Double pneumothorax, the inflation simultaneously of both pleurae This, I think, is a new procedure It is indicated only when threatening symptoms urge haste Cases with active foci in both lungs, presenting long continued high fever with marked intoxication and the concomitant symptoms, when not responding soon to unilateral inflations, should be treated by double, or bilateral, inflations

The rationale of double pneumothorax rests on the same data as does unilateral pneumothorax, and on the fact that animal experiments indicate that life is sustained by one sixth the normal lung area Thus it appears that all of one lung and a part of the other may be obliterated without destroying life

In doing double pneumothorax, hospital care is very desirable, but not indispensable, as illustrated by the cases reported below Indeed, these cases show the practicability of doing double pneumothorax in ambulant cases

REPORT OF CASES

CASE 1—Miss M., aged 21, came to me after long sanatorium treatment with extensive bilateral involvement as determined by physical signs and by the roentgenograph She was, however, quite stout, weighing 175 pounds, and had very little fever, but she was easily fatigued and was expectorating many tubercle bacilli Two series of inflations were given

During seventeen days, Oct 4 to 21, 1913, eight inflations were given into the right pleural sac, varying in amount from 300 c c of nitrogen to 500 c c The resultant pressures were negative, touching neutral only once. During this period her weight dropped 6 pounds and there was slight rise in the maximum daily temperature, from 98 8 to 99 5 There were many rales over both lungs, especially over the left After a rest of fifteen days, inflations were begun on the other side, and inasmuch as four of the inflations on the first side were large (1 125 c.c., 1 500 c.c., 1,050 c c. and the last one 1 050 c.c) I judge that there was still some gas in the right side when inflations were begun into the left side, although no roentgenograph was available.

The second series of inflations, given on the left side, covered eight months (Nov 5 1913, to July 2, 1915) Sixty-one inflations were given in amounts varying from 100 to 875 c c, and complete compression was obtained with low positive intrapleural pressure. During the compression of this lung the right lung reexpanded fully During this series, the weight dropped 20 pounds during the first six months, and then climbed back to 160 No treatments were given from June 6 to July 21, 1914, the patient resting at a mountain resort While at the resort the temperature remained normal Repeated examinations of the sputum have failed to reveal tubercle bacilli at any time since Oct. 17, 1913, twenty-six months

The inflations were stopped by the appearance of a left empyema with all the threatening accompaniments high fever chills, rapid pulse anorexia emaciation, vomiting and weakness For a time the patient appeared moribund Repeated aspirations of the pus, however, followed by air inflations and intrapleural injections of glycerin containing formaldehyd were followed by gradual recovery, so that now no fluid can be detected, the maximum daily temperature is below 100, the weight is rapidly increasing under an excellent appetite, and all symptoms have disappeared save a cough with a daily output of 3 ounces of clear, thin mucoid sputum, in which no tubercle bacilli can be found

This case not only illustrates the practicability of bilateral pneumothorax treatment in ambulant cases, but incidentally indicates the value of the glycerin containing formaldehyd in treatment for empyema While there was doubtless gas simultaneously in both pleurae for a short time, this case properly illustrates treatment by alternate induced pneumothorax.

CASE 2—The following is a condensed account of the treatment of a tuberculous waitress, aged 22, by simultaneous inflation of both pleurae with nitrogen Her family is clear of tuberculosis, but she had lived in an infected house. Her own history reveals an attack of "lung fever" at 7 years of age. Since then she has never felt well Marriage at seventeen resulted in one living child and three voluntary abortions Her present illness "began" two years ago with hemoptysis, cough, and tubercle bacilli in the sputum During the last six months before she consulted me, she kept her bed with fever and weakness, but in November, 1912, she was able to come to the clinic, where the treatment was carried out She appeared well nourished and intelligent The physical examination, including roentgenograms, clearly showed advanced bilateral infection, and tubercle bacilli were abundant in the sputum. Two Wassermann examinations and the urine were negative The blood pressure varied from 90 to 110 She presented a typical case of advanced pulmonary tuberculosis of both lungs

For seven months she was given hygienic-dietetic and medicinal care with tuberculin After twenty-five injections of the tuberculin, although the weight remained unchanged pneumothorax was undertaken because of the extensive rales and continuous high temperature.

At first, thirty-six inflations of the left pleura were done, during a period of twenty-four weeks (May 28 to Nov 22, 1913), varying in amount from 600 to 150 c.c. (In all inflations of this patient the resultant intrapleural pressures were either neutral or positive.) At the conclusion of this series of inflations, the patient felt stronger, and generally improved, but there was dyspnea on exertion. She had lost 4 pounds in the seven months, but fever had entirely disappeared The left lung had been well compressed, as confirmed by roentgenoscopy

One week later, with unabsorbed gas in the left pleura, inflations were begun into the right pleura and discontinued on the left side. Seven injections were given in nine weeks (from Nov 29 1913, to Jan 17, 1914), in amounts varying from 850 to 300 c.c. During this series the temperature rose to a maximum daily ascent of 101 The weight dropped 3½ pounds more the cough grew worse, and the amount of sputum was much increased Toward the end of the nine weeks it was noted that the first pneumothorax (left side) was being absorbed and the lung expanding In the presence of the unfavorable course it was decided to compress the left lung again The apex beat was found in the fourth interspace just outside the nipple.

It is interesting to note that when the needle was thrust into the left pleural space the pressure was negative 8 and that after 100 c.c. had been introduced the pressure suddenly jumped to negative 16, and at the same time the patient complained of a sudden sharp pain in the chest. This I interpreted to mean the breaking away of new adhesions, allowing the lung to collapse. The reinflation of the left chest was begun after an interval of three weeks, when ten inflations were given in a period of nearly eleven weeks (Feb 7 to April 27, 1914,) in amounts varying from 1,400 to 50 c.c. An unidentified acute infection occurred during this period with coryza, diarrhea and fever, but the general strength, appetite and sleep remained good and there was a gain of 2 pounds The left lung was fully compressed and the right partially

After a week, the inflations of the right side were again resumed, and five inflations were given during the next seven and a half weeks (May 4 to June 29, 1914) in amounts varying from 250 to 100 c c Thus both lungs were simultaneously compressed, the left quite fully During these weeks the patient gained 6 pounds

After another week, inflations of the left side were resumed, twenty-two inflations being done during seventeen months (July 6, 1914 to Nov 15, 1915) in amounts varying from 300 to 50 c c But during this series a momentous event occurred the patient left town after the seventeenth inflation, and remained without treatment for seven months On her return it was discovered that the lungs had both expanded fully, and that pleural adhesions, generally distributed, rendered the introduction of gas impossible in therapeutic amounts She had lost 9½ pounds

During the period between February, 1914, and January, 1915, while both lungs were simultaneously compressed, the patient resumed her best weight since under treatment, her temperature fell to normal the amount of sputum dropped from 4 ounces to three-quarters ounce per twenty-four hours, tubercle bacilli were absent for many months, the blood pressure rose to 110, and her general health was distinctly improved

This patient is still under observation but pneumothorax is, of course, impossible on account of general adhesions

This case illustrates the advantage in some cases of bilateral treatment It also illustrates the danger of inhibitory pleural adhesions forming when treatment is interrupted for too long a time

Case 3—A, man, aged 22, presented complete bilateral involvement with adhesions The case was seriously complicated by chronic alcoholism with acute alcoholic exacerbations The patient was partially intoxicated at many treatments, and had alcoholic tremor for many days at a time

From Oct 24 to Dec 15, 1915, about seven weeks he received thirteen injections into the right side in amounts varying from 250 to 1,200 c c, resulting in positive intrapleural pressures varying from positive 1 to positive 34 c c water, the high pressures being due to pockets in the pleural adhesions His maximum daily temperature varied from 99 to 100 6 From Dec. 15, 1913 to Jan 5 1914, a period of about twenty-one days, he received six simultaneous bilateral inflations, the amounts varying from 100 to 300 c c of nitrogen The resulting intrapleural pressures varied from negative 4 to positive 1 on the left side, and from positive 10 to positive 24 on the right side The simultaneous inflations are indicated in the accompanying tabulation

SIMULTANEOUS INFLATIONS IN CASE 3

	Right c c	Left c c
Dec 15, 1913	125	225
Dec 17, 1913	100	100
Dec 20, 1913	100	300
Dec 24, 1913	175	300
Dec 31, 1913	300	200
Jan 5, 1914	125	250

In February, 1914 this man went to the mountains where he was controlled by an old woman who stopped his liquor, whereupon he gained greatly in every way and grew quite fat After twenty-one months, he returned to town, resumed liquor, and died shortly after a surgeon removed an infected toenail

Case 4—H M, a schoolboy, aged 8, with total involvement of both lungs, expectorating a large quantity of necrotic-smelling pus (lung abscess ?) containing no tubercle bacilli or streptothrix on repeated examinations, received in all twenty-nine inflations, fifteen into the right pleura, nine into the left, and then five again into the right as follows

During a period of fifty-eight days (from Nov 29, 1913, to Jan 21, 1914) fifteen inflations were given in the right side varying in amount from 100 to 700 c c of nitrogen, producing intrathoracic pressures varying from —2 to + 4 c c water Complete compression of the right lung was accomplished There was slight rise of temperature, but it finally returned to normal The sputum was reduced, 4 ounces to 1 ounce per twenty-four hours Marked general improvement, expressed especially in appetite, endurance, sleep, etc, was noted, but the weight fell 2½ pounds The sputum, formerly necrotic pus, became much cleaner and nearly free from odor

After ten days' interval, with gas still present in the right pleura, inflations were begun on the opposite side During a period of forty-three days (from Jan 21, 1914, to March 7, 1914) he received nine inflations on the left side, varying in amount from 150 to 500 c c nitrogen, resulting in pressures from — 4 to — 2 After some of the inflations there was much dyspnea During this series, the sputum increased to 4 ounces in twenty-four hours, the temperature after a temporary rise returned to normal, the sputum lost much of its necrotic odor, and there was a loss of weight of 1 pound

After an interval of twenty-four days, inflations were again given on the original side—the right During a period of twenty-five days (from May 1, 1914, to May 25, 1914) five inflations were given, varying in amount from 50 to 400 c c nitrogen, producing intrathoracic pressures from + 14 to + 20 The sputum fell from 8 to 6 ounces per twenty-four hours, the temperature remained constantly normal, and 3 pounds increase in weight was recorded The weight was then only 1 pound lower than the original weight, Nov 29, 1913 June 5, 1914, adhesions negated an attempted inflation The patient then failed to return

At this writing, now two years since treatment, the boy is still alive and fairly well The sputum is again profuse and has a strongly necrotic odor Though the bacillus was not found in this case, the report is included in a group of tuberculous cases because the streptothrix was absent, and because the patient's sister yielded the bacilli, and because his father is a long sufferer from hard cough and free expectoration and appears clinically tuberculous (though his sputum has not yielded tubercle bacilli)

The case illustrates the practicability of double pneumothorax in an ambulant child

CONGENITAL ANTERIOR CURVATURE OF THE SPINE

REPORT OF CASE *

SAMUEL KLEINBERG, M D
NEW YORK

History—J L, girl, aged 4 months, was brought to the clinic at the age of 3 weeks for bowing of the left thigh The patient is the first child The delivery was very difficult, by breech presentation and accompanied by considerable injury of both thighs The left femur was fractured and healed with moderate deformity For ten days following birth, the child did not move either lower limb A few days before the child's first visit to us, the mother noticed, in addition to the bowing of the left thigh, that the back was very hollow, the abdomen very prominent and usually tense The child nursed regularly, its bowels moved several times daily, the stools being normal in color and consistency, and excepting for being unusually quiet, seemed quite well

The family history was negative

Examination—The child was well nourished, rather fat, with an extremely prominent abdomen and marked lordosis She appeared to be most comfortable lying on her side, and when placed on her back rolled over to one or the other side The anteroposterior curve of the spine was normal in the cervical and dorsal regions, but markedly exaggerated in the lumbar region, being most marked at the lumbosacral junction The lordosis was resistant, and allowed of only slight correction by manipulation, it was slightly diminished in the dorsal position, and was most noticeable when the child lay on her side There was no sensitiveness of the back, and the motions of the spine were free in all directions excepting flexion, which was decidedly restricted There were four deep transverse grooves or folds in the skin of the lumbar region The roentgenogram, which was unusually clear, showed a normal conformation of the spine excepting in the lower lumbar section, where there was a sharp curve forward or extreme hyperextension The lateral view showed definitely that the individual vertebrae were normal in outline and that there was no luxation of any vertebrae or spondylolisthesis A roentgenogram of the gastro-intestinal tract showed that region to be entirely negative. There was no spina bifida or other congenital malformation The other joints were normal, particularly the hips, which were carefully investigated for any possible contracture or dislocation There was, however, limitation to hyperextension of the hips There was moderate outward bowing due to the fracture at birth of the left thigh The abdomen was large and tense. The liver was felt several fingers' breadths below the free costal border There was no other mass to be felt. Very slight pressure on the abdomen produced discomfort The abdomen had on a few occasions been observed to be quite flaccid and much smaller in size, but at no times did the anterior curvature of the spine seem reduced In the belief that the apparent distention of the abdomen might have something to do with the curvature of the spine, rectal tubes were inserted. Each time the child was relieved of considerable flatus, but on no occasion was the size of the abdomen or the condition of the spine altered The urine, examined on two occasions, showed no albumin A neurologic examination made by Dr William Sharpe was reported to be negative.

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* From the clinic of Dr Royal Whitman at the New York Hospital for Ruptured and Crippled

Anterior curvature of the lumbar spine, or lordosis, is either primary, that is, congenital, or secondary There was no condition present in this child such as contracture at the hips, congenital dislocation of the hip, etc, to which the lordosis might be a sequel, and as the condition was observed in the first few weeks of life and was then very resistant, we are warranted in considering this a genuine congenital deformity

A review of the English literature reveals only scant reference to it There is no mention of this condition in the *Transactions of the American Orthopedic Association* from 1890 up to date Dr Royal Whitman[1] says of this lesion, "It is not a simple postural deformity but it is usually secondary to disease or deformity either of the spine or adjoining members" Bradford and Lovett, and other modern writers similarly refer to this condition only as secondary to other deformities or lesions

A few of the older authors, however, do speak of anterior curvature of the spine as a primary congenital lesion Adams, in his "Lectures on Curvature of the Spine," says, "In the lumbar region, it is found as a peculiarity in the natural conformation of the individual, often existing in several members of the same family and hereditary" Brodhurst, in his book on "Curvatures of the Spine," says that anterior curvature of the spine may be congenital, and as such an affection it is combined with monstrosity and with spina bifida

In our case, it would appear that there can be no doubt that the lesion is not secondary to any other condition and that it was present at birth

CONCLUSIONS

1 This is a genuine instance of congenital lordosis or anterior curvature of the spine

2 Heredity plays no role in this patient, as no member of either branch of the family has a like condition

3 Despite the marked lordosis, there is no albuminuria

1 West Eighty-Fifth Street

A CASE OF SPONTANEOUS RUPTURE OF THE MALARIAL SPLEEN

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Fred Moeller, M D., Chicago
Surgeons to the Twenty Third General Hospital British Expeditionary Force, France

History—C W entered the Twenty-Third General Hospital, British Expeditionary Force, France, with the following history He had had no special illness during childhood, and no history of any specific infections He went to India the latter part of February, 1912 He was perfectly well until some time in August of the same year, when he was taken suddenly ill with cramps over the entire abdomen, followed a few hours later by an attack of dysentery He had no nausea or vomiting After forty-eight hours he was admitted to the hospital, where he remained for two weeks

For the first twenty-four hours he was on the bed pan continuously The stools were of a bloody mucous character After treatment was instituted, the patient began gradually to improve, and at the end of two weeks he made an apparent recovery During this time he lost considerably in weight After being up for one week he was taken suddenly with chills, which gradually grew worse, and would last from five to fifteen minutes The chills came on regularly, one slight chill during the day and a severe chill during the night After two days of treatment the chills disappeared, and in three weeks the patient was discharged from the hospital After his discharge he went back to his battery, and was perfectly well until October, 1914, when he returned to England While on board the transport he was again taken sick with chills and fever Treatment was immediately instituted and he made an apparent recovery in a few days After landing he was taken with vomiting, which was very severe and lasted for two days He had no pain, dysentery, or fever After the vomiting ceased he felt well again, and began to gain in weight until May 8, 1915 While at the front in France, after a severe bombardment, he was taken sick with some nervous trouble, which lasted for a few days He had several of these attacks, and was finally sent to the convalescent camp, where he remained for two weeks, making a complete recovery After returning to his battery he was in the trenches until Aug 13, 1915 There is no history of his having suffered any injury

Aug 13, 1915, he was taken sick with chills and fever, headache, malaise and pains in his abdomen and chest This lasted for three days, when he was admitted to the casualty clearing station After being put to bed and treated, he began to feel better His temperature and pulse were normal He remained here for six days, when he was removed to the Twenty-Third General Hospital While on the train he was taken with severe pains in the epigastric region which finally extended over the entire abdomen On arrival at the hospital, his temperature was 97, pulse 70, respirations 18

Physical Examination—The patient was emaciated, the skin flabby and he appeared anemic His respirations were slow, but shallow The excursions of his right chest were not so great as those of the left. On percussion a dull area was made out over the lower right side of the chest extending as high as a line drawn from half an inch above the nipple through to the back. The vocal fremitus was decreased over the area, and the breath sounds were diminished on auscultation but not entirely absent Breath sounds were normal above this dulness The left side of the chest showed normal breath sounds, although it was hyperresonant on percussion The heart's dulness was crowded to the left of the nipple line, and the apex beat was 1 inch to the left of the nipple line in the fourth interspace.

The abdomen was slightly distended but soft, and there was no muscular rigidity The patient was very tender over the region of the gallbladder, especially toward the epigastric area There was some tenderness over the appendix region

While in the Twenty-Third General Hospital the patient suffered from acute attacks of pain simulating gallstone colic

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[1] Whitman Royal Orthopedic Surgery Ed 4 Philadelphia Lea & Febiger 1910

The pain, however, extended to the left upper hypochondriac region He suffered three or four attacks daily The temperature ranged from 101 to 102 August 25 he had a slight chill, the pulse varying from 80 to 102, and the respirations from 18 to 22 He complained of no pain in the chest During the night of August 25, he had a very severe attack of pain in the epigastrium, his temperature dropped to 97 4, and his pulse rose to 120, and respirations to 26 The patient was in collapse An examination of the blood showed a leukocyte count of 10,500 with 55 per cent of polymorphonuclears, 40 per cent of small mononuclears and 5 per cent of large mononuclears No plasmodia were found

Operation—On the following morning an exploratory laparotomy was done Under ether anesthesia, the abdomen was opened in the right upper quadrant through a rectus incision, and a large amount of old clotted blood appeared, and also a considerable amount of dark fluid blood The liver was slightly enlarged and of normal consistency There were adhesions between the parietal peritoneum and the liver, and also adhesions of the omentum to the liver The gallbladder was easily emptied, and no stones were felt

The stomach was congested, but otherwise normal The spleen was enlarged and quite soft The omentum was firmly adherent to the convex surface of the spleen The adhesions between the omentum and the spleen were not broken up

The pancreas was normal, a few mesenteric glands were enlarged The appendix was firmly wrapped with omentum and was club-shaped The omentum was adherent to the intestine and was infiltrated with dark blood forming hemorrhagic areas The appendix was removed No localized point of hemorrhage was found

A drain was inserted through a punctured wound in the right iliac fossa, and another inserted through the upper wound The patient was returned to the ward in a fair condition He improved until August 31, when his temperature suddenly rose to 105, pulse 120, and respirations 40

On examination, his abdomen was found to be soft, and the wounds in good condition, there was no tympanites Examination of the chest showed a consolidation in the middle and lower lobe of the right side over which bronchial breathing and râles were heard The vocal fremitus was increased

Diagnosis of "lobar pneumonia" was made The patient had his crisis on the seventh day, when his temperature remained normal for two days

Then he began to have daily chills and elevations of temperature An examination of the blood showed the malarial plasmodium Quinin was given From that time on he made an uneventful recovery—his wounds healed slowly, and he was discharged to England September 26, with a small sinus still persisting in both incisions

Diagnosis—A positive diagnosis of the origin of the hemorrhage was not made at the time of the operation, although the various causes of interabdominal hemorrhage were considered, as hemorrhagic pancreatitis, ruptured spleen, etc Exploration failed to reveal any apparent cause for the hemorrhage, except from the enlarged soft spleen with the adhesions of the omentum to the convexity of the organ These were not broken up, as they were already effectually checking any hemorrhage that might have come from this source Malaria was considered at this time on account of the previous history, but an examination of the blood previous to operation did not reveal the malarial organism, nor did the smears taken from the free blood in the abdominal cavity reveal any organism

But the chills and fever and the finding of the plasmodium during the convalescence of the patient make a diagnosis of malaria certain This, when taken into consideration with the attack of severe epigastric pain while the patient was en route to the hospital, and the subnormal temperature on the day of admission, and again the *attack of pain* two days later with a drop in temperature and collapse, and the negative findings of the abdominal organs at the time of operation with the exception of the spleen, make it evident that we were dealing with a case of malaria complicated by a spontaneous rupture of the spleen

REPORT OF TWO HAY-FEVER CASES TREATED WITH THE POLLEN EXTRACT

Margaret L Noyes, M D, Boston

Case 1—Child, aged 11, came, Aug 20, 1915, for treatment for relief from hay-fever symptoms There was a history of one similar attack the previous season Family history was negative The child was not of strong physique, but physical examination showed no special defect except anemia Nasal examination revealed the anterior ends of the inferior turbinates puffy and covered with a thin watery discharge, causing complete obstruction The symptoms were sneezing, a constant watery secretion from nose and eyes, dark circles under the eyes, itching mucous membranes and insomnia The mother was advised to send the child away, which was done, but no good resulted from it

September 10, the ragweed and goldenrod pollen skin reaction was tried There was a severe reaction to both Two days later the ragweed pollen extract in a weak solution was given by hypodermic, according to the technic of J L Goodale (Pollen Therapy in Hay Fever, *Boston Med and Surg Jour*, July 8, 1915) For two days there was a local swelling and a tenderness at the point of injection, as well as a swelling of the whole arm from elbow to shoulder The hay-fever symptoms disappeared, and there was no return, so there was no necessity of repeating the treatment

Case 2—E F, man, aged 21, referred for hay-fever treatment, July 27, 1915, had had hay-fever attacks of severe nature occurring each year beginning about the middle of August A college roommate who also had hay-fever told him that he had been cured by vaccine treatment, and the patient wished to try it The family history was negative The present condition was excellent, the patient was well developed and athletic Nasal examination made the last of July was negative except for a slight fulness and watery discharge which had been of a few days' duration The throat and pharynx were in good condition

A culture was taken from the nose and throat for autogenous vaccine The growth contained staphylococci and a few pneumococci During the first two weeks of August four vaccine treatments were given The slight congestion and the watery discharge disappeared after the first treatment At the time when hay-fever symptoms were expected, the patient, following his usual custom, left his home in Connecticut for New Brunswick where he had never been troubled, but because of business returned in two weeks On reaching Boston, August 27, the symptoms began, sneezing itching mucous membrane, watery discharge from nose, and insomnia, with increasing severity Three vaccine treatments were given, one each on August 31, and September 3 and 9, on the latter date the ragweed and goldenrod pollen extract skin reactions were tested on the arm Both reacted, but ragweed more, giving a good-sized white welt surrounded by an erythema about the size of a half-dollar

September 14, the ragweed pollen extract in weak solution was injected by hypodermic That night there was a severe reaction, asthmatic in nature The local reaction was also severe, the arm swelling from elbow to shoulder The asthma and local symptoms subsided in three days Nasal examination revealed only one of the hay-fever symptoms remaining, a slight congestion of the inferior turbinates with lack of perfectly free breathing space through the nose No further treatment was given and there was no return of the symptoms

103 St James Avenue

A Governmental Function—No one, in a free country, can force a diseased individual to seek effective treatment or prevent him from using an ineffective treatment, unless his disease imperils the health of others At that point, and not before, the government can and should take personal measures However, it is a well recognized function of the government to protect individuals against their own ignorance It does this when it forces the child to go to school, it does this when it places the swindler in jail—Editorial in *Cleveland Med Jour*

PAPER CLIP IN BRONCHUS SEVENTEEN YEARS REMOVED BY SUPERIOR BRONCHOSCOPY*

EDWIN BEER, M D, NEW YORK

During the past seventeen years numerous cases of foreign bodies removed from the bronchus by either the superior (laryngeal) or inferior (tracheal) route have been recorded The following case is placed on record because of the long interval[1] between aspiration and removal, and to emphasize the fact that even after remaining so long in situ, its removal was not difficult

History—M K., aged 26, was admitted July 1, 1915, and discharged July 19, 1915

Present Illness—Seventeen years ago the patient was playing with a paper clip which he had put into his mouth, when it suddenly became lodged far back in his mouth near the base of his tongue His father, with the use of an ordinary teaspoon, made an attempt to remove the clip, but unfortunately pushed it still farther down the patient's throat The patient felt much better and did not notice any particular distress, and his parents believed that he had swallowed the clip He was given castor oil The next day, while the patient was playing in the street, he was suddenly seized with a paroxysm of coughing and raised a large quantity of mucus mixed with blood, also he had great difficulty in breathing

He was taken to a hopsital where he was placed under observation for a period of one week After being put to bed his symptoms disappeared and he was finally discharged without any attempt being made to recover the paper clip

After being home for a few days he was taken suddenly very ill and his physician said he had pneumonia He was sick at this time for about six weeks, having had what the physician called a relapse from which he finally made an uneventful recovery He then enjoyed fairly good health for about two years, when he noticed a dull aching pain in the right side of his chest and complained of a hacking cough, with the expectoration of large quantities of mucopurulent sputum marked shortness of breath and a sense of oppression and suffocation Thinking that he was beginning to have some lung disease he consulted his physician He says he was first told he had tuberculosis, and that he must go back for a second examination after a certain period This he did and was told he had bronchial asthma He states that he received treatment for this for about twelve years at several institutions and from various physicians During this time he coughed more the sputum became very offensive and foul smelling his pain and sense of suffocation increased and he became exhausted on the slightest exertion, finally having to give up his work entirely His weight, however, did not decrease with increase of his symptoms His appetite was always good Not being able to work, he gave up all hope and came to Bellevue Hospital believing that he had tuberculosis On being questioned, he told of the paper clip he had had in his mouth seventeen years before and of the treatment he received since that time. He was admitted to the hospital for Roentgen-ray examination July 1 1915

Examination—Roentgen-ray examination[2] showed a distinct shadow of a flat-headed paper clip in the right main bronchus with head down It also showed marked thickening of the adjacent pulmonary tissue

Operation—July 15, 1915 superior bronchoscopy was performed and the clip removed under combined ether and cocain anesthesia Cocain and epinephrin were applied in the right bronchus to control reflexes and ether insufflation (intratracheal) through a metal catheter in the bronchoscope kept the patient thoroughly anesthetized The clip was embedded in the granulation tissue which almost filled the bronchial lumen, and there was copious discharge during the manipulations As soon as one leg of the clip was seen it was firmly grasped with forceps and the clip withdrawn with the bronchoscopic tube (Jackson-Rochester) In withdrawing the clip the two legs became spread apart, one entering the tube and the other trailing after

Subsequent Course—July 17, 1915, there was very little febrile reaction At first expectoration ceased almost entirely, then it became more copious, and then gradually diminished in amount

July 19, 1915, the patient was discharged feeling well

Nov 10, 1915, the patient was shown before the New York Surgical Society in excellent condition A recent roentgenogram showed marked improvement in the pulmonary condition, though considerable thickening was still present. The patient still had a moderate cough and some expectoration, undoubtedly due to the bronchiectasis that had developed from the paper clip remaining in situ for seventeen years

48 West Seventy-Fourth Street.

REPORT OF A CASE OF TETANUS, WITH COMPLICATIONS

J S GAUMER, M D, FAIRFIELD, IOWA

Nov 23, 1915, H H, man, aged 23 years, ran a splinter from a barnyard gate into the back of the second phalanx of the middle finger of the right hand The splinter was deeply embedded alongside the bone and was removed five days later November 30, one week after the initial injury, the patient felt a slight stiffness in his jaws and some pain in his back.

December 1, he consulted me and at once entered the Jefferson County Hospital Within a few hours, he received 9,000 units of antitetanic serum, 6,000 units intravenously and the other 3,000 units subcutaneously The wound in the finger was opened freely and cauterized thoroughly His temperature on entrance to the hospital was 99 4

On the following day, December 2, the patient received 15,000 units of antitetanic serum, December 3, 18,000 units, December 4, 9,000 units, and December 5, 3,000 units, all given subcutaneously During this time his temperature had steadily increased to above 104, with the other symptoms of tetanus steadily increasing in severity, the jaws set, opisthotonos, jerking of the muscles of the back, and pain in the abdomen, with some delirium He was able to take fluids freely through a drinking tube. During this time in addition to the antitetanic serum, he was given morphin sufficient to control the pain, with chloral in 40 grain doses by rectum, repeated when considered necessary During the forenoon of December 6, he had a severe convulsion Immediately following this, he was given morphin, one-half grain, with atropin, 1/150 grain, hypodermically, and received 3,000 units of serum in the spinal canal

As the wound in the finger continued to have pus in it in spite of repeated cauterization and wet dressings kept constantly hot, it was thought that there might still be an incubation of tetanus bacilli in the wound, therefore the finger was amputated the head of the metacarpal bone being removed, the end of the wound being left open with hot moist dressings continued

On the following day, December 8, the patient's temperature continued to increase, reaching 105.2 when he received 6,000 units of serum in the spinal canal Early the following morning the temperature reached 105.8 and then subsided December 9, to 102.2 The symptoms of tetanus began to show improvement, there was less stiffness and opisthotonos and less sedatives were needed December 10 and 11 the temperature increased again and the patient was continually delirious December 11, his temperature reached 105 4 and during the afternoon of this day the tympani of both ears ruptured and the ears began to discharge freely His delirious condition had been such that he had not said anything to his attendants about having pain in the ears It was now hoped that his condition would improve, but about twenty-four hours later the wound in his hand began to show signs of inflammation, notwithstanding the fact that it had free drainage, and hot moist dressings had been kept up.

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* From the Bellevue Hospital Fourth Surgical Division

[1] Jackson C (Ann Otol Rhinol and Laryngol June 1913) reports a remarkable case in which he removed a collar button twenty six years after aspiration I believe this and the case here reported represent the longest periods between aspiration and extraction

[2] By Dr Hirsh Bellevue Roentgen-ray laboratory

December 15, the temperature again reached 105.6, and then subsided, as the hand began to show improvement. The tetanus symptoms gradually improved, and, December 24, the temperature reached normal. The otitis media improved gradually, and the amputation wound healed so that the patient was able to leave the hospital, entirely recovered, Jan. 10, 1916.

The interesting features of this case are: the short period of incubation, which statistics show produces the most serious prognosis, the fact that the patient had only one convulsion, although all the other symptoms of the tetanus were severe, the extremely high temperature at the height of the tetanus, the otitis media, and the infection in the hand, and the unusual complications and recovery, notwithstanding the latter.

The patient received in all, 63,000 units of antitetanic serum, massive doses of morphin, chloral by rectum, which usually had a decided sedative effect producing the much needed sleep, and also bromids by mouth.

I believe that the most decided effect of the antitetanic serum followed the intraspinal administration, although the immediate reaction seemed to produce a hyperpyrexia.

Therapeutics

BACKACHE

The therapy of backache may belong to the domain of the neurologist, the surgeon, the gynecologist or the genito-urinologist. Backache is a common symptom of innumerable disorders. It can be treated rationally only after the correct diagnosis is made. Unless this is done, any improvement resulting from the treatment is similar to that following any hit-or-miss therapeusis.

By backache is usually meant lumbar pain beginning at the region of the first lumbar vertebra and extending downward, often to the sacral and coccygeal regions. The pain may be in the center of the back, along the spine, or on either one or both sides of the spine.

Often the clue to the real cause of the pain may be obtained by careful questioning. The duration and nature of the pain, its exact location, whether in the center or to one or both sides of the spine, are all of importance. It is essential to know whether or not the pain is associated with fever, has followed a convalescence from some infection, is associated with pain on urination or with changes in the appearance of the urine, has followed a sudden strain, is aggravated by bending the body in any direction, or has any relationship to menstrual or uterine disturbances.

After a careful history of the patient has been recorded, a thorough physical examination is essential in the search for the etiologic factor in the backache. On account of the large number of varied causes, treatment without examination is generally guesswork. The best way to examine the patient is to remove his clothing, and to observe him first in the standing position, noting whether or not the body is flexed to one side or the other, or more weight is placed on one leg than on the other. The presence of any abnormal curvatures or deformities of the spine, or any enteroptosis should be noted. In palpating, points of tenderness should be sought over the spinous processes of the vertebrae, and the presence of ptosed or enlarged abdominal organs should be noted. In women a vaginal examination is essential for the detection of any abnormal uterine conditions, such as marked retroversion or tumors of the uterus, or any pelvic exudates or abnormalities. The patient should flex the body in various directions while in a standing position and should be requested to flex and extend the thighs on the abdomen while lying on his back, that the freedom of these motions and the amount of pain they cause may be noted.

Roentgen ray examination of the spine will often be of service in revealing thickening or ankylosis of the vertebral joints or rarefaction of the bodies of the vertebrae. It will also aid in helping to exclude renal or ureteral calculi. Finally, the temperature and urinary findings may aid in deciding the cause of the trouble.

The causes of backache may be divided into groups.

BACKACHE DUE TO STRAIN OR LACK OF BALANCE

By far the greatest number of backaches belong to the fatigue and lack of balance group. This group has been described by Reynolds and Lovett[1] as due to loss of balance, when an unusual strain is placed on the lumbosacral tissues and the muscles of this region. The strain may be produced by posture, by poor muscular balance and by abnormal conditions within the abdomen, such as enlargement of the organs, enteroptosis and obesity. The fatigue may result from an attitude constantly assumed in some form of occupation, such as stooping, bending, or lifting heavy objects.

Those backaches resulting from changes in muscular balance due to uncorrected broken or fallen arches of the feet, or to the continuous use of poorly fitting shoes, are also placed in this group. The pain in these cases often extends up the lower extremities to the back. From a faulty tread, the muscles of the leg, thigh and lower part of the body may be strained and become painful, and even the knee joint or hip joint may be strained by the lack of balance. A careful examination of the shoes, feet, and posture on standing and walking, and an investigation of the kind of work or the kind of strain to which the patient is subjected will generally disclose the physical cause and the consequent treatment of this kind of backache.

As a result of the constant backache or frequent attacks of backache, there may come a time when, in the highly neurotic individual, the mind is frequently concentrated on the back, and as a result pains will be present without any cause. Associated with this may be other symptoms, such as perverted heat and cold sensations, an abnormal state of the reflexes indicating a neurasthenic tendency. This condition has been termed "hysterical spine" or, after railway accidents, "railway spine."

The treatment of this form of backache will tax the energies of the therapeutist. No definite rules can be laid down, except that all other possible causes of the backache must be excluded before a diagnosis of hysterical or railway spine is made. In these cases, treatment should be mainly general, and should be based on efforts to relieve and cure the neurotic condition of the patient. Local treatment is generally only of psychic value, but for that reason alone is essential. In local treatment, use may be made of electricity, vibrations, electric light heat, spinal douches, or other hydrotherapeutic measures, and even at times the thermocautery will be found of value Hypodermic injections of water into the painful regions may be efficient The general treatment calls for increased feeding, general massage, and regulated exercise, with periods of rest Occasionally, tonics may be indicated

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[1] Reynolds, Edward, and Lovett, R. W.: An Experimental Study of Certain Phases of Chronic Backache, The Journal A. M. A., March 26, 1910, p. 1033.

BACKACHE DUE TO INFLAMMATION OF NERVES

To this type of backache belong those due to affections of the nerves or to affections of the posterior nerve roots with their nerves This includes neuritis, simple or part of a multiple neuritis, resulting from alcoholism, lead or diabetes Removal and elimination from the system of the alcohol or lead is the first aim of treatment in the first two instances, and the pain will be ameliorated by proper diet in the case of diabetic neuritis

The acute pain of the neuritis must be stopped, and if local sedatives, as heat, rest and support by straps or otherwise, do not give immediate relief, a drug sedative must be given, with the full recognition of the probable prolonged or recurrent backache being likely to cause repeated need for the narcotic, and hence the danger of the formation of a drug habit Occasionally the pain is so severe that morphin with atropin must be given, the latter dulls the endings of the peripheral nerves If the pain is not so severe, or if it is modified by one or two hypodermics, then large doses of sodium salicylate may be tried, as 1 gm once in four hours for a few doses In some instances large doses of quinin may be efficient, as 0 4 gm three times a day for a few doses If either a salicylic preparation or quinin is pushed to physiologic effect, a bromid should be given synchronously to prevent the uncomfortable salicylism or cinchonism, respectively Five-tenths gm of sodium bromid may be given for each gram of salicylic acid, and 1.2 gm of sodium bromid for each 0 4 gm of quinin When there is insomnia without severe pain, chloral in doses of from 0 5 to 0 6 gm may be given at bedtime Sodium diethylbarbiturate (veronal-sodium) in doses of 0 3 gm may be given for sleep, if there is no severe pain Locally to the back, gentle high frequency electric currents may be tried, or the arc lamp treatment, with later dry cupping, and perhaps the thermocautery

In posterior ganglionitis with herpes, if there is considerable pain, the treatment may be much the same as in simple neuritis If the pain is not too severe, a narcotic is not needed Generally rest and soothing powders and absorbent cotton placed over the eruption, with supporting adhesive straps to limit motion, markedly ease the pain

BACKACHE DUE TO INFECTION

A large number of backaches are due to changes in the bodies of the vertebra or in the intervertebral joints When the joints are involved, the pain may be due to an acute infectious arthritis or to chronic hypertrophic arthritis (ostearthritis) These are both associated with a primary focus elsewhere, the acute condition may be part of an acute infection, such as acute follicular tónsillitis, pneumonia, gonorrhea or influenza When these causes are present there will also be symptoms of the primary infection, such as more or less increased temperature The involved portion of the spine may be exceedingly tender Generally this kind of backache disappears with the subsidence of the primary infection

Hypertrophic arthritis (ostearthritis) is a slowly developing process, often lasting several years and resulting in a thickening, and sometimes in a union of the vertebrae and cartilages It is caused by a constant source of infection, the commonest being repeated tonsillar infections, pyorrhea alveolaris and chronic gonorrhea It may be associated with an arthritis deformans of the extremities The diagnosis is assisted by Roentgen examinations of the spine

The treatment consists in removal of the primary source of infection, if it can be located Large hypertrophied tonsils should be removed, and alveolar pyorrhea should be treated An abscess in or around the roots of the teeth should be sought by means of roentgenograms, and if an infected tooth is found it should be removed or properly treated

If there is any history of a former venereal infection, in the male, a careful examination should be made of the deeper urethra, the prostate and the associated organs, and any part found infected should receive proper treatment

Vaccines have sometimes been found of value, especially when they have been prepared from organisms isolated from a primary focus Until the source of infection is eradicated, local treatment of the back is discouraging, although some relief from the pain may be given by applications of heat, counterirritation and strapping

Two common causes of infection of the bodies of the vertebrae are tuberculosis and typhoid fever In tuberculosis the backache first manifests itself when the destruction has progressed to such an extent that a gibbus, or bending, of the spine has resulted, and with it pressure on the nerves has occurred In the treatment of this condition, spinal support and spinal rest, as furnished by a brace or a plaster cast, should be used Later, after the disease has become quiescent, the destroyed bone tissue may be successfully repaired by plastic bone surgery

The so-called typhoid spine occasionally develops after convalescence from typhoid fever The pain is localized, and may become severe It does not produce angulation and the deformities characteristic of tuberculous involvement of the spine The spine is rigid and very tender, and there is always more or less fever The condition is, as a rule, self-limited, and with proper rest and simple local and general measures, usually results in recovery

(To be continued)

The Elimination of Quackery and Isms

This is a division of our work that must come to the front, not only the patent medicine faker but the many cults and isms that lead people astray, must be censored and combated The entrusting of human lives and welfare, must only be to such men and methods who show that they have spent the adequate time and effort that will enable them to judge conditions in the light of modern science No man with a correspondence school knowledge of the principles of medicine, with perhaps hardly a grammar school education, should be allowed to pronounce questions of diagnosis and treatment Even a six or nine months' special study of some principle of medical science elaborated into a system or cult is not sufficient We should endeavor to have anyone who interrogates the human system obtain as thorough a knowledge of that system as modern science can give and then with light of this, if he conscientiously sees fit to multiply the value of some single therapeutic measure he can at least calculate its limitations —From 'Correlative Factors in the Tuberculosis Campaign,' by Dr Arthur F Fisher, in *Journal of Outdoor Life* January, 1916

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SATURDAY, MARCH 4, 1916

NEW EVIDENCE AGAINST ALCOHOL

If it could be shown, we read in a recent careful review of the alcohol question, that small doses of alcohol produce no ascertainable ill effects on the human organism, the higher mortality among the moderate drinkers as compared to total abstainers might have to be explained as due to some as yet unrecognized cause or causes other than alcohol But if laboratory and clinical evidence shows that alcohol in so-called moderate quantities (social moderation) produces definite ill effects, such as lowering the resistance to disease, increasing the liability to accident and interfering with the efficiency of mind and body and thus lessening the chances for success in life, to say nothing of any toxic degenerative effect on liver, kidneys, brain and other organs, the excess mortality that unquestionably obtains among moderate drinkers as compared to total abstainers must be ascribed chiefly to alcohol[1]

The data already collected on the effects of alcohol are extremely voluminous Some of the work may be said to be tinged with almost inevitable traces of personal bias, for the subject is one on which many persons have firm convictions, often based on ethical, social or economic grounds rather than on physiologic evidence Nothing is more convincing in this field, however, than clear-cut indications furnished by strictly objective scientific investigation of the possible effects of alcohol in moderate doses — for these alone are worthy of debate — on the functions of the human organism Duplication of results and frequent repetition of the experiments by independent investigators in a matter of such fundamental importance will call forth no criticism of wasted scientific energy Accordingly the Nutrition Laboratory of the Carnegie Institution of Washington, ideally equipped for a reinvestigation of the alcohol question under the best auspices, has taken up the subject anew with a thoroughness and on a scale which it is expected will satisfy the majority of scientists as to the dependability of the results The program for this exhaustive experimental study of the physiologic consequences of the ingestion of small doses of ethyl alcohol in man has begun with the psychologic aspects of the subject This feature, studied by Dodge and Benedict,[2] included the effects of alcohol on a selected group of interrelated processes covering the fundamental neural activities at various levels of the cerebrospinal system, from the simplest reflexes of the lumbar cord to the most complex cortical arcs that could be measured accurately by available laboratory technic

Of the simple reflex arcs which are available for experimentation, the patellar reflex and the protective lid-reflex were chosen, chiefly because of their similar latency and the accuracy of their modern technics As types of more complex cortical arcs, certain eye reactions to peripheral stimuli, speech reactions to visual word stimuli, and free associations were selected Dodge and Benedict regard the last two mentioned as characteristic phases of the individual's adjustment to his social environment The fundamental perseveration tendency was measured by the partial memorization of series of words Sensory changes were ascertained by faradic threshold measurements Motor coordination and the reciprocal innervation of muscles are further details that were studied

The subjects were either college graduates who were very moderate users of alcohol or patients who had been under treatment for alcoholism Two alcohol doses were used, one containing approximately 30 c c and the other 45 c c of absolute alcohol

The greatest effect was found in the reflexes In the patellar reflex, alcohol increased the latent time 10 per cent, while it decreased the amount of quadriceps thickening 46 per cent In the protective lid-reflex it increased the latent time 7 per cent, while it decreased the extent of lid movement 19 per cent It increased the latent time of the eye reactions 5 per cent, and that of the speech reactions 3 per cent Memory and the free associations were only slightly affected Sensitivity to faradic stimulation decreased 14 per cent after alcohol The number of finger movements decreased 9 per cent, and the velocity of the eye movements decreased 11 per cent as a consequence of the ingestion of alcohol

These observations bring further evidence of the general depression of the neuromuscular processes at all levels of the cerebrospinal system There is depression of even the simplest forms of motor processes, such as are found in eye and finger movements Certainly nothing in all of this suggests any true stimulation — any increase in psychologic or physiologic efficiency Impairment seems to be the keynote expressed by the depression Here is the statement of the Nutrition Laboratory investigators "In conjunction with the pulse acceleration, the general neuromuscular depression may be regarded as presumptive evidence of the effect of alcohol on organic efficiency In none of our data is there any indication of a pure facilitation effect of alcohol " These scientific findings leave the conclusion of Quensel[3] unimpeached "Work and alcohol,' he said "do not belong together, especially when work demands wideawakedness, attention, exactness and endurance "

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[1] Fisher, Irving, and Fisk, E L How to Live, New York, 1915, p 236

[2] Dodge, R, and Benedict, F G Neuromuscular Effects of Moderate Doses of Alcohol, Proc Nat Acad Sc, 1915, i, 605

INSTRUMENTS OF PRECISION, AND PROGRESS IN SCIENCE

Professor Zeleny,[4] of the University of Minnesota called attention recently to the indispensable service rendered to the progress of science by the development of instruments of precision "Long experience," he said, "has taught that however much we may owe to the great minds that evolve basic generalizations and hypotheses, real progress in science ultimately rests on the establishment of facts Our reasoning faculties by themselves are unable to cope with the complexity in the physical world, and are sure to stray from reality unless they are continually guided by observation and experiment " This is true not only for the physical sciences but also for the biologic sciences As Professor Cope, one of the greatest of American zoologists, used to say, "Nature always proves to be less complex and ever so much more simple in her operations than would seem to be true to the theoretic considerations of the closet philosopher " Facts always prove simpler than theories, and observations than hypotheses, and both owe their accuracy to instrumental precision more than anything else

What is true of science in general is particularly true of medicine Instruments enable us not only to observe more accurately and more systematically all that our senses ordinarily perceive, but through them we actually become endowed with new senses that open up fields of knowledge of which otherwise we might not have dreamed When Galileo devised the thermometer, he gave mankind a new and marvelous power of using the senses This discovery made the sense of sight accurately serve the function of the heat sense Nearly two centuries elapsed, after his discovery, before the thermometer came to be used in medicine When the older medical practitioners saw thermometers used they asked rather superciliously whether physicians were expected to carry around such a toy to occupy the patient's attention and divert his mind That has been the story of other instruments, the stethoscope, the blood counting apparatus and other diagnostic mechanical aids were each in turn considered with contempt Galvani, revealing biologic electricity, was called 'a dancing master for frogs " Even in our own time the blood pressure apparatus is going through something of the same experience, so far as the general practitioner is concerned

Steps of real progress in medicine can be measured definitely by tracing the introduction of instruments particularly for diagnosis Further, the progress of medical practice as an art depends largely on the generalization of the use of instruments of precision for diagnostic purposes There is nearly always a distinct feeling of opposition to the introduction of new devices because of the inconvenience involved in having them at hand and the habits of accuracy demanded for their proper use Once they are introduced we wonder how we ever managed to do without them, and realize how handicapped preceding generations of physicians were who knew nothing of them While steps in the supposed progress that comes from hypothesis and theory often have to be retraced, with serious loss of time to the generation as well as disadvantage to the patient and discouragement for the physician, the advances which are registered with the use of instruments of precision remain with us as definite achievements for both the science and the art of medicine

CEREBRAL PSEUDOTUMOR AND TORULA INFECTION

Occasionally cases occur with symptoms and signs that appear to warrant the diagnosis of brain tumor, but in which after a time recovery takes place or no tumor is found at operation or after death Such cases are referred to as pseudotumor cerebri Cases with recovery have seemed quite mysterious, only the complete study of similar cases under favorable conditions will help to clear up the dark points

Recently Stoddard and Cutler[1] have published some observations on two cases that are of much interest not only from the bearing the results have on cerebral pseudotumor but also because they serve to enlarge and clarify our understanding of human infections with yeastlike organisms The first case occurred in a woman, aged 42, who died some days after a right subtemporal decompression on account of symptoms of brain tumor, extending over a period of three months or more, and definite signs of increased pressure Chronic inflammatory lesions, found in various places, explained the more localizing symptoms, there was internal hydrocephalus from stoppage by inflammatory tissue of the aqueduct of Sylvius, and also chronic meningitis The second case was in a man, aged 39, who died after an illness of several months, the tentative diagnosis considered unilateral hydrocephalus, rapidly growing glioma and abscess in the temporal lobe, the postmortem examination showed an internal hydrocephalus, due to blockage of the foramen of Magendie by inflammatory tissue, chronic meningitis, peculiar lesions of necrotic and inflammatory nature in the internal capsule and other parts of the brain, and fibrous processes in the lungs, bronchial lymph nodes, liver and spleen In neither case were there any lesions of the surface of the body

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[3] Quensel U The Alcohol Question from a Medical Viewpoint—Studies in the Pathology of Alcoholism Year Book, United States Brewers Association 1914 p 168

[4] Zeleny Science Feb 11 1916

[1] Stoddard and Cutler Torula Infection in Man Monographs of the Rockefeller Institute for Medical Research, No 6 1916

As to the nature of the lesions, it appears that in both cases there were present in the intracranial lesions in enormous numbers yeastlike organisms which the authors believe belong to the torula group Unfortunately they could not make extensive cultural studies in their cases, the organisms were present in the cerebrospinal fluid in the second case — herein lies a hint of the possible value of cultural and microscopic dy of the fluid for diagnostic purposes in similar cases — and injected in mice they produced quite typical lesions in the brain and meninges Stoddard and Cutler also found that cultures of a torula, isolated from a pulmonary lesion in a horse (Frothingham), in mice and rats produced changes very much like those seen in their two human cases as well as in four more of like nature previously described by others, but regarded as cases of oidiomycosis or blastomycosis The changes are of a chronic inflammatory nature, associated with more or less necrosis, the organism usually occurs within mononuclear and giant cells which suffer lysis and disintegration as it multiplies by budding In the brain substance the lesions are peculiar in that the proliferative reaction is slight while the brain tissues melt away and a gelatinous material forms about the organisms In other tissues the lesions resemble those of tuberculosis, and as healing takes place, fibrous masses may form It is possible that intracranial lesions also may heal and hence that cases of pseudotumor cerebri with recovery may have been instances of this sort of infection

As seen in the lesions, the organisms appear like nongranular, often hyaline, round masses with an easily stained wall, varying in size from 1 to 13 microns, often producing resting cells of larger size It multiplies only by budding, does not produce mycelium, does not ferment sugars in the same way that yeasts do, and hence belongs in the torula group It differs from typical yeasts, which, besides multiplying by budding, also form endospores and ferment sugars, from the organism of coccidioidal granuloma, which does not bud but sporulates and forms hyphae, and from the typical organisms of blastomycosis (preferably oidiomycosis), which bud, do not form spores, but produce mycelium So far as observations now go, the morbid processes in the cases of torula infection in man differ in important characteristics from those of saccharomycosis, of which we as yet have only two instances (Busse, Buschke), of coccidioidal granuloma, and of systemic oidiomycosis, in none of which, to mention only one point, occur the solution of cells and tissues and the formation of gelatinous material described by Stoddard and Cutler in torula infection On account of this histolytic action, which is especially striking in the early lesions, they propose that the organism be called *Torula histolytica* They also recommend that the term "blastomycosis" be dropped, because of its indefinite biologic significance, and that the term "oidiomycosis" be applied to the diseases, caused by organisms that bud in the tissues and form mycelium in cultures, which appear to occur more frequently about Chicago than elsewhere Much is yet to be learned about torula infection and the other diseases here discussed The mode of infection is as yet obscure, and little or no help in diagnosis is available from immunologic methods Almost every new case that is studied thoroughly adds something to our knowledge Cases like those observed by Stoddard and Cutler, and others of related nature, probably occur more frequently than apparent Progress depends on wider appreciation of this fact and of the need for special care that they do not escape recognition and study

RESPIRATORY FEATURES OF CARDIAC AND CARDIORENAL DISEASE

The respiratory mechanism is singularly responsive to changes in the reaction of the blood A very slight alteration in the direction of increased acidity, that is, hydrogen ion concentration, leads to a prompt stimulation of the respiratory center and corresponding effects on the respiratory movements Ordinarily the reaction of the blood is regulated through the agencies of the kidneys, which excrete nonvolatile acids, and the lungs, which eliminate the volatile acid products of metabolism, notably carbon dioxid Whenever the acid reaction of the blood increases, pulmonary ventilation is increased as a result, and an augmented output of carbon dioxid through the lungs follows By reduction of the tension of the gas in the blood in this way the normal reaction of the circulating fluid usually is restored, and respiration resumes its usual pace It has sometimes been believed that the carbon dioxid tension of the blood is the stimulatory factor in the chain of events just described, at present, however, it is agreed that carbon dioxid does not act specifically in this sense, but only so far as it exerts acid properties [1] It is also the acid factor most readily eliminated

Carbon dioxid introduced into the inspired air and thus returned to the blood readily leads to dyspnea It acts to increase the stimulus to the respiratory center, and can be applied in a functional test of the respiration Exercise, of course, acts in a comparable way It increases the acid products in the blood, and promptly provokes increased pulmonary ventilation Exercise cannot be measured easily, and it involves a variety of added factors, such as the heart and skeletal muscles, which cannot be kept constant or strictly comparable where comparisons are to be instituted For this reason Peabody of the Peter Bent Brigham Hospital, in his functional tests, has studied the effects of breathing increasing quantities of carbon dioxid in normal subjects and patients at rest [2] It was found that normal individuals exhibit a fairly uniform and constant increase in ventilation to a given rise in carbon dioxid in the air breathed Their total ventilation is doubled when the carbon dioxid is between 4 2 and 5 4 per cent The experiments revealed no differences in response which bore any relation to age, size or weight Cardiac and cardiorenal patients whose circulation is compensated, and who have no evidence of acidosis as shown by the carbon dioxid tension of the alveolar air, behave in an exactly similar manner Patients, however, with decompensation and with a grade of acidosis sufficient to lower the alveolar carbon dioxid, may double their ventilation when the carbon dioxid is only 2 to 3 per cent of the inspired air

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[1] Winterstein H Neue Untersuchungen über die physikalisch chemische Regulierung der Atmung Biochem Ztschr, 1915, lxx 45

Dyspnea, therefore, is produced much more easily in the patients with acidosis than in those without this symptom A smaller increment of acid is required in the system to raise the hydrogen ion concentration of the blood to the point of greater stimulation effect The explanation of this is probably quite simple The range of the resistance of normal blood to any influence that tends to make it acid is greater than that of blood in the condition of acidosis As the limit of this resistance is approached in acidosis, the addition of acids to the blood results in a larger and larger increment in the number of free hydrogen ions The presence of an acidosis in cardiac cases thus renders the organism more sensitive to carbon dioxid or other acids formed in muscular work, and the muscular work sufficient to cause dyspnea is less than under normal conditions In the pure cardiac cases, the dyspnea seems to depend on a slow or insufficient circulation, which results in a poor oxygenation in the tissues, and may even cause a transient acidosis, owing to the incomplete combustion of metabolic products In the cardiorenal cases this may be complicated by the presence of a considerable permanent acidosis resulting from imperfect renal excretion of nonvolatile acid products The acidosis of chronic nephritis is due to a retention resulting from inefficient renal excretion [3] When acidosis is associated with cardiac weakness, the question of acidosis becomes much more involved, as a new element is added There is not only the acidosis of nephritis, due to the imperfect renal function, but there may also be an accumulation of acid products of metabolism which are the results of an inadequacy of the supply of oxygen reaching the tissues Peabody concludes that while acidosis is probably not the sole factor causing the dyspnea in cardiac and cardiorenal disease, it may be an element of considerable importance in producing the clinical picture

THE NATIONAL BOARD OF MEDICAL EXAMINERS

Until about forty-five years ago, only one or two states had any laws regulating the practice of medicine and until 1882, no state required an examination At that time in the majority of states a diploma from a medical college was all that was necessary to obtain for its holder the right to practice The physician who desired to move to another state was put to no particular hardship, since all he had to do was to present his diploma By 1902, however, the number of states in which the examination of all applicants was required had been increased to thirty-eight The diploma then became a mere "scrap of paper" without value except to the extent of admitting its holder to the licensing examination — an ordeal which few men who had been in practice for several years could pass at least without the sacrifice of much time and labor for a review of the fundamentals of medicine Important as was such an examination for the recent graduate in order to prove his training in those fundamentals, it consisted largely of nonessentials for those who had long been in active practice

In order to correct this apparent injustice to practitioners of medicine, a system of reciprocity was devised the state board waived its right to test the qualifications of the applicant, and accepted the certificate of another board in lieu of its own examination Even at present the provision made for reciprocity provides for only a small proportion of the instances in which physicians, for good reasons, desire to move from one state to another

Fourteen years ago The Journal[1] called attention to these conditions, pointed out that only nine states remained in which a physician's diploma would entitle him to secure a license without an examination, and recommended a voluntary national board of medical examiners as the most practical solution of the problem At that time the three government services in Washington were suggested as the basis for the creation of this national board. It was also shown that the educational standards should be sufficiently high and the character of the examination so practical and thorough that the qualification thus *secured* could be recognized by the licensing boards of the various states As announced about three months ago,[2] a definite movement was under way, and, as shown on page 762 this week, the creation of such a board is now an accomplished fact

No scheme could be adopted which would not be subject to criticism for some reason or other, but the plan on which this board is created appears to leave little ground for criticism Since it is a voluntary board, its certificate need not be accepted by any state licensing board unless it sees fit to do so On the day of government clerks and other employees in the executive departments in Washington is proposed in an amendment or "rider" to the legislative, executive and judicial appropriation bill offered by Representative Borland of Missouri As the population of Washington and its suburbs is made up largely of government employees, official, commercial and social life have long been adjusted to the seven hour day There is a general protest against the change on this account as well as because of the failure of the Borland amendment to provide additional compensation for the additional time demanded and because of the likelihood that increased hours will mean decreased efficiency Although the clerks and other employees affected by the proposed change are not identified with the American Federation of Labor, the Federation, after action by its executive council, has filed a strong protest

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[2] Peabody F W Clinical Studies on the Respiration No 1 The Effect of Carbon Dioxid in the Inspired Air on *Patients with Cardiac* Disease Arch Int Med November 1915 p 846

[3] Peabody F W Clinical Studies on the Respiration II The Acidosis of Chronic Nephritis Arch Int Med December 1915 p 955

[1] National Board of Medical Examiners editorial The Journal A M A Jan 11 1902 p 108

[2] *A National Board of Medical Examiners* editorial The Journal A. M A, Dec 11 1915 p 2091

ILLINOIS

Personal—Dr Percy J Carroll has resigned as surgeon of the Macon County Hospital, Decatur, and will practice in East St Louis——Dr Edmond H Ames, Antioch, a veteran physician of Lake County, has become totally blind

Physicians Endorse Water Works Plan—The Kewanee Physicians' Club, at a recent meeting, endorsed heartily the proposed issue of bonds to finance the new water works The members pledged themselves to support the plan of the mayor and city commissioner in any other reasonable plan to safeguard the water supply of the city

Chicago

Internists Meet.—The ninth regular meeting of the Chicago Society of Internal Medicine was held February 28 Dr Charles Spencer Williamson reported "A Case of Generalized Tuberculous Adenitis Resembling Hodgkin's Disease with Recovery," and Dr Arthur R Elliott spoke on "Syphilitic Aortitis—Clinical and Roentgen Considerations," and Drs Robert L I Smith, Martin R Chase and James F Churchill detailed the results of "Studies of Blood Urea in Various Types of Nephritis"

Personal—Dr Raymond W McNealy has been appointed a member of the surgical staff of Cook County Hospital to fill the vacancy resulting from the departure of Dr Harry M Richter for service with the German Hospital unit——Dr John A McGill, for three years president of the Illinois St Andrews Society, was tendered a complimentary dinner by the organization at the Hotel La Salle, March 1——Dr Franklin H Martin has been visiting in Pensacola, Fla——Dr and Mrs James Stuart Pritchard started for California, February 20

Eulogize Dr Favill—At the memorial meeting for Dr Henry Baird Favill held at the City Club, February 26, Mr Allen B Pond, president of the club, eulogized Dr Favill as follows "Henry Favill erect, lithe, the head thrown back, the elastic tread, the swinging stride, joyous vigor incarnate! It seemed that he, of all men, should for years to come resist the attacks of disease, the ravages of time, and yet—last Sunday in the faint gray of the early dawn that splendid spirit slipped away into eternal silence" Drs Frank Billings, Graham Taylor, Sherman C Kingsley and Frank H Scott also paid eloquent tribute to the memory of Dr Favill

Sanitary District Blamed for Typhoid—In February, seventy-one cases of typhoid fever were reported to the department of health from the district receiving its water supply from the Sixty-Eighth Street pumping station while only eighteen cases were reported from all the rest of the city The health commissioner considers that the sanitary district of Chicago is responsible for this condition, which he considers due to the improper use of the drainage canal whereby "engines which were installed to pump sewage are employed to make more electricity for sale" A warning was issued by the commissioner to the people living in the territory bounded by Forty-Fifth Street on the north, Eighty-Ninth Street on the south and from the lake to the city limits, to take preventive inoculation against typhoid fever

IOWA

Still Quarantine Against Illinois—The Iowa Animal Health Commission, at a session, February 8, refused to withdraw the order prohibiting the shipment of stock from Illinois to Iowa owing to the presence of foot and mouth disease in that state

Larger Hospital Needed—The Evangelical Deaconess Hospital, Marshalltown, has issued an appeal to business men to raise $120,000 to complete the buildings required for the institution Of this amount, $30,000 is asked from Marshalltown and Marshall County

Personal—Dr Henry Matthey, Davenport, surgeon in chief of the Military Hospital at Braunsberg, East Prussia, on account of efficient service has been decorated by the German Emperor——Dr Will D Runyon, assistant superintendent of the Iowa Sanatorium, Oakdale, has resigned to become surgeon and superintendent of the sanatorium of the Union Pacific System at Colorado Springs——Dr John W Cogswell, health officer of Iowa City, ruptured an ear drum while diving in the swimming pool of the university gymnasium, February 9

Child Welfare Research Station—Although a bill for the establishment of a child welfare research station in the University of Iowa failed in the last legislature, it is expected that such a measure will be adopted in the coming session As a means of acquainting the people of the state with the objects and the great value and importance of such a research station, in *University Bulletin*, New Series 107, Carl E Seashore, professor of psychology, has prepared a statement of the plans and possibilities of such a research station for the conservation and development of the normal child The subject is discussed under the heads of heredity and prenatal care, nutrition of the child, preventive medicine, social surveys and social policy, education and morals and applied psychology These apply to the research features of such a child welfare station The practical features are provided for in a proposed extension division which would include a reference bureau, an examination bureau, a correspondence division, a loan library, a central permanent exhibit, publicity bulletins, etc.

KENTUCKY

Warning—Dr A L Thompson, Madisonville, writes to The Journal, asking that a warning be published against L A McCoy, who claims to represent the Ohio Service Company of Cincinnati, and who is selling automobile supply service at $10 He states that an investigation made in Cincinnati reveals the fact that there is no such concern as the Ohio Service Company known there

MARYLAND

College Reopened—St John's College, Annapolis, which has been under quarantine restrictions for ten days because of the prevalence of scarlet fever, was given a clean bill of health by the health authorities, February 11, and the regular college work was resumed February 14

Imported Typhoid—The Danish steamer *Wladimer Savinm*, which arrived at Baltimore, February 14, has seven cases of typhoid fever on board The disease is believed to have been brought from Marseilles, France, and was at first thought to be typhus fever The men are improving rapidly and will soon be able to return to duty

Coroners for Baltimore City—The following physicians were appointed during the past week by the governor as coroners to the various stations in the city Drs James K. Insley, F Edward Smith, Otto M Reinhardt, Walter L Denny, William T Riley, Albert D Driscoll, James G Wiltshire, John J Morrissey, Jr, and Henry L Sinskey

New Home for Skin and Cancer Hospital—The Skin and Cancer Hospital has recently moved into its new home on Greenmount Avenue, Baltimore The buildings are large and the grounds ample for the accommodation of the patients The work of the hospital is almost exclusively charitable, and a class of patients not usually received in other hospitals are treated It is proposed at an early date to establish a free dispensary in connection with the hospital

Personal—Dr Walter E Dandy, for several years one of the assistant surgeons at Johns Hopkins Hospital, has been appointed resident surgeon of the hospital, to succeed Dr Roy D McClure, who recently became surgeon-in-chief at the new Henry Ford Hospital in Detroit Dr Dandy for nearly six years had made a special study of surgery at the Hopkins Hospital and has had considerable experience in research work——Dr Harry J Moss, New York, who was recently appointed superintendent of the Hebrew Hospital, Baltimore, to succeed Dr Mason R Pratt, has taken up his new duties Dr Moss has been assistant superintendent of the Mount Sinai Hospital in New York.——Dr Harry F

Shipley Granite is under treatment for kidney trouble at the Mercy Hospital Baltimore and is said to be improving

MICHIGAN

Communicable Diseases—Dr Allison H Edwards has been elected city physician of Grand Rapids to succeed Dr Ralph C Apted, deceased His first duty is to investigate the reported cases of erysipelas in Butterworth Hospital——Dr Arthur B Egan, city physician of Muskegon has appointed a corps of inspectors whose duty it will be to visit the homes in Muskegon quarantined on account of scarlet fever, at least once in twenty four hours

Vital Statistics—The Forty-Seventh Annual Registration Report of Michigan, covering the year 1913 has been printed and is ready for distribution This is the sixteenth report of the new series containing accurate statistics of deaths as collected under the law of 1897, and accurate statistics of births as collected under the law of 1905 The report shows the following total births in 1913 73 058 births per 1 000 estimated population 24.8, total deaths, 40 827, deaths per 1 000 estimated population 13 8, total marriages 33 529 persons married per 1 000 estimated population, 22 7 total number of divorces, 3 978 persons divorced per 1 000 estimated population 2 7 The month of March shows the greatest number of births, November the least, March also shows the greatest daily mortality, while October shows the least The maximum number of marriages per day was in June and the least in February The report contains detailed analyses in tabular form and in the descriptive matter of the figures relating to vital statistics the section relating to the causes of death is particularly interesting

MINNESOTA

New State Board Members.—Drs Samuel H Boyer, Duluth and Theodore Bratrud, Warren have been appointed members of the State Board of Medical Examiners to succeed Drs Charles Bolsta Ortonville and Frank B Hicks, Grand Marais, terms expired——Dr Carl J Holman, Mankato, has been reappointed a member of the board

Leprosy—According to figures given out by Dr Henry M Bracken secretary of the state board of health there are eight lepers in the state of Minnesota, all of whom are isolated so that the danger of spreading the disease is minimal Dr Bracken says the danger of contagion in leprosy is about one-hundredth as great as in tuberculosis Sixty-three cases of the disease have been reported since 1890, and there were seventeen deaths from it prior to that time

Personal.—Dr and Mrs Archa E Wilcox narrowly escaped death in a fire which damaged their home in Minneapolis to the extent of $10 000, February 14——Dr Alfred M Wang, Minneapolis, was overcome by smoke in a fire in the Hulet Block, February 4, and was rescued by firemen——Dr Adrien J Kirghis, St Cloud sailed from New York for France on the steamer *La Touraine* February 12——Dr Jacob W Magelssen, Rushford, celebrated the fiftieth anniversary of his graduation from Rush Medical College, January 24

Dispensary Opened—The Medical Dispensary of Duluth opened, February 14, and is to be open each day from 12 to 1 30 p m., when members of the staff will be on duty A trained nurse is in charge during the entire day Dr Asher C Taylor is chief of the general medical staff, Dr Arthur N Collins chief of the surgical staff, Dr Albert G Schulze, chief of the department of children's diseases, Dr Archibald L McDonald chief of the department of gynecology and Dr David L Tilderquist, chief of the department of diseases of the eye ear, nose and throat

NEW JERSEY

Motor Club Organized—Physicians of Camden have organized a motor club with an initial membership of eighty-one, and have elected the following officers president, Dr Ahab H Lippincott, secretary Dr W Kempton Browning, and treasurer, Dr Thomas M Kain

Tuberculosis—The board of health of Perth Amboy has started an agitation for an isolation hospital for Middlesex County for tuberculosis patients——Two men of Passaic suffering from tuberculosis were charged with wilfully exposing their minor children to the disease Both defendants had been inmates of the Isolation Hospital Judge Costello at the hearing of the case, February 19, sentenced both men to a term of six months in the tuberculosis pavilion of the Isolation Hospital

NEW YORK

Wife Also Dies—Mrs Pauline Rosenburg Elsner, widow of Dr Henry Leopold Elsner, who died in Washington, February 17, died at her home in Syracuse, February 23, from grief and shock consequent to the death of Dr Elsner

To Do Honor to Elsner's Memory—A joint meeting of the Syracuse Academy of Medicine and the Onondaga County Medical Society was held February 18 to conduct memorial exercises in honor of the memory of Dr Henry L Elsner and to draft suitable resolutions and to contribute a floral offering The committee selected to attend to these details consisted of Drs I Harris Levy, David M Totman Frank P Knowlton, William A Groat and Edwin H Shepard

Health Centers—Buffalo has established three health centers, with regular hours for consultation and treatment of the residents of the territory adjacent to the center The following supplies are distributed free from these centers to physicians and the public diphtheria and tetanus antitoxins vaccine virus typhoid vaccine meningitis serum, diphtheria culture tubes Widal outfits, sputum cups, holders and fillers, pocket sputum cups, paper napkins and paraffined bags

Endowment of Art and Science Department of University—The University of Buffalo has received actual and provisional endowment for the new department of arts and sciences amounting to $750 000 Of this amount $100,000 has been given outright by Mrs Seymour H Knox, who with her children expects eventually to increase this to a total of $500,000 Gen Edmund Hayes has given $250 000 for the first building on the university site, providing $1,000,000 be raised for like purposes before June, 1919

The Financial Budget and State Hospitals—The first public discussion with reference to the budget for hospitals and charitable institutions of the state was held on February 23, at which time Dr Charles G Wagner, superintendent of the Binghampton State Hospital said there were many reasons why the budget plan of appropriations could not work He suggested that if the superintendents of state hospitals got together they could devise a plan by which many thousands of dollars could be saved to the state As a result of this suggestion a letter is being sent to each superintendent of a state hospital asking for his ideas on the preparation of a financial bill

New York City

Personal—Dr and Mrs Forbes Hawkes have sailed for Havana——Dr George O'Hanlon, general medical superintendent of the Bellevue Hospital, acted as city paymaster February 16 and paid from his own pocket a payroll of $2 000 which he hopes to collect later from the city

Instruction in Contagious Diseases—In 1915, the health department conducted a series of lectures and a laboratory course in infectious diseases open free to the practicing physicians of the city The course was so successful that the department as announced in the *Weekly Bulletin*, will give another course this spring, the days, dates and hours to be announced

Changes in Medical Faculty of Columbia University—Prof Raymond Dodge of Wesleyan University has been appointed nonresident lecturer in psychology for the academic year, Dr Alexander T Martin, lecturer in pharmacology, Dr Archibald M Strong, lecturer in clinical medicine, and Dr Euen Van Kleeck, instructor in physiology Dr Gorham Bacon has tendered his resignation as professor of otology, to take effect at the close of the present academic year

Leprosy—A statement before the senate health committee February 15, to the effect that there were 100 persons with leprosy at large in New York, has brought out the statement from the authorities that there are only twenty-four known lepers in the city They are permitted to live in their homes and engage in their usual occupations, this arrangement being made during the administration of Dr Sigismund S Goldwater as health commissioner, after consultation with the leading dermatologists of the city

New Medical Society Organized—The first meeting of the Bay Ridge Medical Society was held on the evening of February 1 The district from which the membership is recruited embraces the territory from the Narrows to Thirty-Ninth Street and Gravesend Avenue. The following officers were elected president, Dr John P McQuillin, vice president, Dr Robert E Coughlin, secretary, Dr Frank E A Stoney, treasurer, Dr Roderick Byington, all of Brooklyn The society has forty-two charter members

Memorial to Blackwell Sisters—Friends and classmates of the late Drs Emily and Elizabeth Blackwell, pioneers in medical education for women, gathered, February 18, at the New York Infirmary for Women and Children, which was founded by the Drs Blackwell in 1853, formally to dedicate the Emily Blackwell ward and to present the Emily Blackwell tablet Dr Josephine Walter presented the tablet in behalf of the Emily Blackwell testimonial fund which was started by the alumnae association of the college in 1899, to raise $20,000 for a memorial ward and tablet

To Promote Industrial Hygiene—On February 18, a meeting was held in Cooper Union under the auspices of the People's Institute and the department of health to discuss the duties of the city government toward the working people of the community, with especial reference to improving the conditions under which they work The speakers were Dr Sigismund S Goldwater, Hugh Frayne, Dr Henry Moskowitz, Royal Meeker and Dr Louis I Harris Letters and telegrams expressing sympathy with the purposes of the meeting were read from President Wilson, Governor Whitman, Congressman London and others

Semicentennial of New York Health Department—The New York City Department of Health is to celebrate its semicentennial by a banquet at the Hotel Plaza, March 9 It is said that as at present constituted, the department dates from 1866, when the jurisdiction covered not only New York City and Brooklyn, but the several surrounding counties, and the death rate was larger than that of any other large city in the world In the last fifty years it has been reduced from 36 per thousand to less than 14 Among the speakers at the banquet will be Mayor Mitchell, Henry Bruers, Surgeon-General Gorgas, State Health Commissioner Briggs, Dr William H Welch, Dr Peter Bryce, representing the Dominion of Canada, and Dr Stephen Smith, the latter being a member of the original board of health

OHIO

Hospital for Youngstown—The chamber of commerce and board of health of Youngstown are working in conjunction for the establishment of an unpretentious but substantial isolation hospital, the cost not to exceed $25,000, to be erected on the site now owned by the city on Mahoning Avenue

Personal—Dr Clyde E Ford, Cleveland, has been appointed secretary of the state board of health, succeeding Dr Eugene F McCampbell, Columbus, resigned——Dr William H White, Cleveland, has been elected chief medical examiner of the Workmen's Compensation Insurance Department of the State Industrial Commission——Dr Frank Warner, Columbus, read a paper before the B Merrill Ricketts' Experimental Surgical Research Laboratory, Cincinnati, February 19, on "Endocarteritis and Connective Tissue Changes in Their Relation to Epithelial Malignancies, Based on the Study of Two Hundred and Six Cases," illustrated by lantern slides

PENNSYLVANIA

Measles Close Schools—On February 24, Dr Samuel G Dixon, State Health Commissioner, notified the Allentown health authorities that on account of the epidemic of measles they should at once close all schoolhouses, and forbid all children under 15 years of age to go to public places of amusement There are at present 260 cases of measles under quarantine in Allentown, and thus far this month there have been 365 cases, with several deaths Theaters and other places violating the regulations will be closed

Industrial Plants Defy Law Compelling Medical Attendance—It has been called to the attention of the Bureau of Medical Education and Licensure of the State of Pennsylvania that certain industrial and commercial plants have violated the Medical Practice Act of Jan 1, 1912, by the employment of unlicensed persons to give medical and surgical attention to their injured employees, and to render services such as may be legally performed only by one licensed to practice medicine in this state This bureau, therefore, desires to place emphasis on the following facts

The head of the medical department of any industrial or commercial plant must be a licensed physician of this state

It is not permissible for either an unlicensed assistant or a nurse to in any way alter the treatment until the order to do so has been given by the licensed head of the department

It is legal in Pennsylvania for any one, licensed or unlicensed, to apply first aid to any injured person, but it follows as a prerequisite that the licensed head of the department must see this patient at his next visit and direct the future treatment

It is not permissible for an unlicensed assistant or a nurse to perform any type of surgical operation

"First aid" is to be construed as meaning the rendering of only such services as will contribute to the safety and comfort of the injured until he or she has the opportunity of consulting a licensed physician

The attention of industrial and commercial plants is called to the fact that violation of this act is subject to severe penalties

Philadelphia

New Head for Blockley—William G McAllister has been named superintendent of the Bureau of Charities, succeeding Danley W Seltzer, resigned, and will have charge of the Philadelphia General Hospital, the Hospital for the Insane, and the Home for the Indigent at Byberry

Feebleminded Exhibit—Six states have contributed exhibits to the Feebleminded Exhibition, held in this city, February 23 to March 5, under the auspices of Public Charities Association of Pennsylvania with the cooperation of local organizations and a dozen state institutions On February 24, an average of a thousand visitors an hour attended the exhibit A new exhibit from the Seybert Institution arrived on that day, which explained by means of pictures and charts the unusually efficient methods taken to determine the mental state of a boy Among the lecturers were Mrs Martha P Falconer, superintendent of Sleighton Farms, Dr John K Mitchell and Dr Walter S Cornell

Personal—Dr Philip F Williams has been elected a member of the obstetric staff of the Maternity Hospital, vice Dr E P Bernard, resigned——The staff of the proposed postgraduate tuberculosis school at Saranac, in the Adirondacks, will include Dr Henry R M Landis, chief of the Henry Phipps Institute——Dr Charles F Mitchell, former secretary of the Academy of Surgery, is now at Paris on duty with the American Ambulance——Prof Richard P Strong of the Harvard Medical School will deliver the fourteenth Rush Society lecture of the College of Physicians, March 7 His subject will be "Investigation of Typhus Fever in Serbia"——Dr A C Valentine has been named as physician at the Home for the Indigent by Dr Wilmer Crusen, director of Public Health and Charities The salary is $720 a year

TEXAS

Revised Quarantine Code—At a conference, February 9, between the United States customs collector at Galveston and Governor Ferguson, the controversy between the federal and state governments over the enforcement of quarantine regulations at the port of Galveston is stated to have been settled

Personal—Dr Joseph S Wooten has been elected chairman of the Red Cross chapter of Austin——Drs Beverly T Young, San Antonio, William M Brumby, Waco, Zachary T Scott, Austin, and James M Loving, Austin, were elected directors of the Texas Public Health Association at its meeting in Austin, January 26

Health Survey—A health survey is to be made of Paris County under the auspices of the Rockefeller International Health Commission This survey will include inspection of homes and people and, in addition, a campaign of education——The health survey of Orange has been commenced under the charge of Assistant State Health Officer Addeson L. Lincecum, Austin

Hospital Needed at Houston—As the result of studies of sanitary conditions in Houston made by Miss Ella Phillips Crandall, the executive secretary of the National Organization of Public Health Nursing, New York, she considers a hospital for the care of communicable diseases and tuberculosis and the districting of the city for clinics and general nurse service the most imperative need of Houston at present

Students Must be Vaccinated—Under date of February 5, it was reported that the board of health had issued a mandate that students in all schools, public and private, in San Antonio, must be vaccinated in accordance with the state law City Attorney Gillette had advised the board that it had full legal power to make the order and the mayor declared that the city would back the board to the full extent of its power Teachers permitting students to attend school without having been vaccinated, it was said, would be arrested

UTAH

New Officers—At the annual meeting of the Utah County Medical Society, January 26, the following officers were elected president Dr Oscar E Grua, Pleasant Grove, vice president Dr Asa L Curtis, Payson and secretary-treasurer, Dr Walter T Hasler Provo (reelected)

Personal—The president of the Salt Lake County Medical Society and eighty two other practitioners of Salt Lake City have petitioned the city council asking that Dr Samuel G Paul be retained as city commissioner——Dr George E Hyde Salt Lake City has been appointed assistant physician of the State Mental Hospital, Provo

Advisory Medical Staff Planned—The County Commissioners of Salt Lake City County suggest that an advisory staff of physicians and surgeons be selected to serve the County Hospital free of charge, that the county physician and his assistants devote their time to county health and sanitary affairs outside of the hospital, and that an intern be employed on a salary basis

CANADA

Dissecting Laboratory for Sherbrooke, Quebec—Drs Joseph E Noel Jude O Camirand and Calixte Ethier Sr., of Sherbrooke, Que., recently waited on Sir Lormer Gouin premier of Quebec with the petition that the medical bureau in Sherbrooke be empowered to establish a dissecting laboratory The matter will receive consideration at the hands of the Quebec government

Manitoba Physicians Meet.—The annual meeting of the Manitoba Medical Association was held in Winnipeg, February 15 under the presidency of Dr John S Poole, Neepawa It was decided that subject to war conditions, the next meeting should be held in the city of Brandon A resolution was passed expressing the regret of the association on the death of Dr James R Jones The following officers were elected president Dr James McKenty, Winnipeg, vice presidents, Drs Albert E Walkey Portage la Prairie, and Lewis J Carter, Brandon, secretary Dr Alvin T Mathers, Winnipeg, and treasurer, Dr T Glendenning Hamilton, Winnipeg

Hospital News—A base hospital is to be organized in Toronto for returned soldiers and it is likely that the old Toronto General Hospital building will be utilized for the purpose——The Medicine Hat Sask., General Hospital treated 1,458 patients during the past hospital year——The members of the Civil Service in Victoria, B C., will furnish a ward in the Royal Jubilee Hospital of that city to be named after Sir Richard McBride former premier who has departed for England to represent the province abroad——The Western Hospital, Montreal treated 15,810 outpatients during 1915 The financial report shows a deficit for the year of over $8 000

Personal.—Dr Richard Howey, Owen Sount Ont has joined the Canadian Army Medical Corps and has sailed for England——Major Perry G Goldsmith Toronto who has been in France with the first Canadian Overseas Force, is home in Toronto for a short furlough He has recently been gazetted lieutenant colonel and on his return to England will take up his new duties in the Folkestone Eye and Ear Hospital——Dr Reginald W Digby is to be placed in charge of the pathologic department of the Brantford, Ont, General Hospital——Dr Allan B Rutherford has been appointed acting medical officer of health at Owen Sound, Ont., during the absence of Captain Herbert G Murray on active service——Major John L Todd of McGill University, and who is now in France, has been elected a Fellow of the Royal Colonial Institute.——Dr Henry R T Fort, Wallachin B C. has been appointed medical superintendent of the Mission Hospital at Lytton——Dr Jim B Jupp, Woodstock, Ont, who went to England with Toronto batteries in January, is reported to be seriously ill with pneumonia in the hospital at Folkestone, England——Major Ethelbert B Hardy, a Toronto physician, has been promoted to the rank of lieutenant colonel, and is now in command of No 2 Field Ambulance in France——Lieut-Col Henry R Casgrain, Windsor, Ont, who was returned sick to England from command of No 3 Canadian Hospital at Lemnos, has been appointed in command of the King s Canadian Convalescent Hospital at Bushey Park, England

GENERAL

New England Roentgenologists Meet.—A meeting of the Roentgen Society of New England was held in Boston, February 12, at which Dr Willis F Manges, Philadelphia, gave a talk with lantern slide demonstration on "Brain Tumors and 'Pyeloscopy"

Health Meet in Joplin—About fifteen cities in Southwestern Missouri Southeastern Kansas and Northeastern Oklahoma were represented at a meeting held in Joplin, February 17 at which the Interstate Health Officers' Association was organized The officers elected were president Dr Daniel R Hill Joplin, Mo, vice presidents, Drs Charles F Montee, Pittsburg, Kan and Charles S Huffman, Columbus, Kan, secretary Dr Guy P McNaughton, Miami, Okla

Hides Carry Anthrax—C T G Rogers of the New York State Labor Department has requested the Surgeon-General of the United States Public Health Service to issue an order for the redisinfection of all hides imported from anthrax-infected ports of China and South America——Niles Reynolds of Gloversville, N Y is said to have died from anthrax, February 13, the disease having been contracted while working on sheep skins imported from South America

Deficiencies of the Child Supply to be Investigated—As a means of advancing the national defense Senator Kenyon of Iowa has introduced a resolution providing for the creation of a committee to investigate the causes of child poverty and to propose remedies for it The resolution is based on the frequency with which men presenting themselves for enlistment in the military services are rejected because of physical defects that have had their origin during childhood The commission is to consist of seven members, of whom three are to be physicians

Tri-State Physicians Meet.—The Tri-State Medical Society of the Carolinas and Virginia held its eighteenth annual meeting in Richmond Va, February 16 and 17, under the presidency of Dr James H McIntosh Columbia, S C Durham, N C was selected as the next place of meeting and the following officers were elected president, Dr J Allison Hodges Richmond, vice presidents, Drs Charles O Laughinghouse Greenville N C, Harvey E McConnell, Chester S C and William F Drewry, Petersburg, Va, secretary-treasurer Dr Rolfe E Hughes, Laurens, S C (reelected) Drs John N Upshur Richmond, Va, J Howell Way Waynesville N C and Julius H Taylor, Columbus, S C, were elected members of the executive committee and Dr John R Gildersleeve, Richmond, Va, was elected an honorary fellow of the society

Bequests and Donations—The following bequests and donations have recently been announced

St Vincent s Hospital New York City $5 000 St Rose s Free Home for Cancer New York $2 500 by the will of Thomas H O Connor

St John s Guild New York, $3,000 by the will of Miss Lillian M Payne

New York Postgraduate Hospital and Montreal General Hospital each $50 000 by the will of John Torrence Vanneck

Tuberculosis Preventorium for Children Farmingdale N J a donation of $1 000 toward the erection of a pavilion for infants under 1 year of age from Mrs Henry Phipps

St Vincent s Home and St Vincent s Maternity Hospital Philadelphia each $2 000 St Mary s St Joseph's and St. Agnes Hospitals each $5 000 for the founding of free beds by the will of Mary E Flaherty

New York Hospital $5 000, and St Mark's Hospital New York a contingent bequest of $10 000 by the will of Mrs Adelena M Cramer

Stoney Wold Society for the benefit of the sanatorium at Lake Kushaqua N Y $5 000, by the will of Anna P Morrison

FOREIGN

For New Hospitals—Consul Frank W Mahin at Amsterdam Netherlands, reports that a commission appointed to investigate and prepare estimates for increasing the public hospital accommodations in Amsterdam has made two propositions the building of a new hospital and the making of important additions to the Wilhelmina Hospital The proposed new hospital would be used for higher instruction in medicine and surgery, would contain at first 950 beds, the number to be later increased to 1,200, and would cost over $3 000,000 The addition to Wilhelmina Hospital, as proposed, would give 500 additional beds, and would also provide for medical instruction The cost would be about $2,000 000 The present hospital accommodation of Amsterdam is about 4 000 beds

WAR NOTES

Hospital Aid for Russia—A group of Americans is furthering a movement to present Russia with a well-equipped hospital, the hospital to be *under the patronage* of the Grand Duchess Tatiana, the hospital to cost, including transportation and one year s maintenance, $225,000 The committee makes an appeal for subscriptions for this philanthropic work Subscriptions may be sent to the Guarantee Trust Company, 140 Broadway, New York

Plan Three Base Hospitals for New York—At a meeting of the Red Cross on February 16, Mrs E H Harriman gave $24,000 for the equipment of a base hospital in this city and the Red Cross of New York County will start a campaign immediately to raise $48,000 for the equipment of two others Bellevue, the New York Hospital and the Presbyterian Hospital have agreede to cooperate with the Red Cross in this matter It is announced that Dr George E Brewer of the Presbyterian Hospital, Dr Charles L Gibson of the New York, and Dr George D Stewart of Bellevue will hold themselves ready, each with nineteen physicians, forty-six nurses and 100 helpers as a medical unit in the Red Cross, to leave for any point in the world at the order of Col Jefferson R Kean, recently appointed director-general of military relief in the Red Cross organization

Physicians', Surgeons' and Dentists' Fund—A committee composed of Drs George E Brewer, New York, George W Crile, Cleveland, Harvey Cushing, Boston, Joseph M Flint, New Haven, Conn , Walton Martin, New York, and William H Potter, D D S, with Dr Charles N B Camac, New York, as chairman, has sent out an appeal to physicians, surgeons and dentists of the United States asking each one to pledge himself to contribute to the fund for the relief of the physicians, surgeons and dentists of France, $2 per month for the year 1916, to be placed at the disposal of the American Relief Clearing House in Paris and to be expended as it may see fit under the advice of a representative of the French Academy of Medicine and a representative of the minister of war The committee further solicits donations of instruments and hospital equipment of all kinds Checks should be made payable to J P Morgan and Company, for P S D Fund, and addressed to the fund at 16 East Forty-Seventh Street, New York, N Y, and contributions and material should be sent prepaid to the P S D Fund, War Relief Clearing House, 133 Charleton Street, New York, N Y

Red Cross Items—Mr Charles J O'Connor, who recently handled with conspicuous success the relief work in Mexico City, has been appointed assistant director general of civilian relief——There are said to be at present 66,449 women in the French Red Cross Volunteer Service in 1,500 hospitals with an aggregate of 118,000 beds The Red Cross flag is said to fly over 288 buildings in Paris alone——A dispatch to the Havas agency from Bucharest, Roumania, under date of February 17, states that "The German authorities are expelling the American Red Cross missions from Serbia"——During January the American Red Cross shipped 172,048 pounds of hospital supplies valued at $45,779 to the Red Cross societies and other reliable relief agencies in Austria, Belgium, Bulgaria, England, France, Germany, Montenegro and Russia——Early in February the American Red Cross made two large shipments of hospital and noncombatant relief supplies to the American Relief Clearing House, Paris, for distribution in France and to the United States consul at Naples, Italy, for the Italian Red Cross The shipment to France was made on the transatlantique steamer, *Chicago*, and that to Italy by the steamship *Caserta*——Count Rudolf Traun, president of the Austrian Red Cross Society, under date of January 9, writes to the American Red Cross expressing his appreciation of the assurance of the desire of the Red Cross to continue to assist in relieving the distressed conditions in Europe although, owing to the shortage of funds it has been necessary to withdraw most of the trained American Red Cross personnel

PARIS LETTER

Paris, Feb 3, 1916

The War

DYSENTERIFORM DIARRHEAS IN THE ARMY

At a recent session of the Reunion medicale de la IV-e armee, an interesting discussion was held on this subject Dr P Emile Weil reported that he had treated numerous patients with dysentery of average intensity who were apyretic or febrile for several days The patients had typical evacuations, from six to forty stools per day, with few general symptoms The treatment consisted of a diet of vegetable soup and subcutaneous injections of emetin hydrochlorid, which gave better results than any of the other remedies tried (collargol, bismuth, sodium salicylate) After from two to five daily injections of 0 04 gm the patients recovered The stools diminished greatly from the first injection, sometimes the movements ceased completely These dysenteric diarrheas were sometimes due to the dysentery bacillus, sometimes to nonspecific germs The *Ameba dysenteriae* could not be held responsible It is interesting to know that the emetin acts on ordinary dysentery conditions as well as on amebic dysentery

Dr Leon Giroux observed 172 patients affected with diarrhea Two thirds of the cases were dysenteriform diarrhea and true dysentery, the other one third consisted of apparently ordinary diarrhea and some cases of choleriform diarrhea The urinary crisis, which is very marked, is the surest indication of early improvement in the disease The urine, which is scanty at the acute period, increases to 2 or 3 quarts and sometimes more This crisis is accompanied by a heavy discharge of chlorids Patients on a standard diet with plenty of salt eliminate 10, 15 and sometimes even 25 gm of chlorin a day The pulse becomes slow parallel with the urinary crisis falling to sixty, fifty and even forty pulsations a minute There is a temporary total bradycardia, the pulse and the urine returning simultaneously to physiologic level

As treatment Giroux uses chiefly antidysenteric serum and emetin In all cases in which dysentery is suspected he uses serum and in all others, including those in which serum is ineffective, he uses emetin in a dosage of 0 04 gm a day This drug has given remarkably rapid results even in cases which clinically did not appear to be true dysentery Apart from cardiovascular treatment, Giroux recommends morphin in choleriform diarrheas The morphin readily reduces the muscular cramps and produces a refreshing sleep

Dr Felix Ramond has observed about ten diarrheas which were called dysentery The patients had many glairy, bloody stools, with pain and tenesmus The temperature did not exceed 38 C (100 4 F) The facies was griped, sometimes even earthy The stools had a very strong, putrid odor and were often frothy Bacteriologic examination showed the absence of dysentery bacilli and amebas Infection was by the colon bacillus and anaerobic bacteria

The treatment is based on the fact that anaerobic bacteria do not thrive in a carbohydrate and acid medium The diet and the medication should be such as to realize these two conditions in the alimentary canal The diet should be deprived as much as possible of albuminoid substances (milk, eggs, meat) but should consist of carbohydrates (vegetable soup, vegetables, breadstuffs without eggs, sugar and fat) Bactericidal substances should be administered by the mouth or injected directly into the colon The former method is the least effective Antiseptics, such as benzonaphthol, are only slightly active The acids, like lactic acid and sulphuric or hydrochloric lemonade, are neutralized long before they reach the colon Bile in large doses is somewhat effective It is better to attack the infection directly by intestinal lavage Antiseptics (Labarraque's solution, potassium permanganate, etc) and diluted acids may be injected This is an efficacious measure, but difficult to handle, for the action on the already injured mucous membrane is often severe and sometimes increases the irritation Ramond cleanses the mucosa by washing out the colon with sterilized 0 7 per cent saline solution, and then injects about a quart of 5 per cent lactose solution, with or without laudanum, which the patient retains as long as possible The lactose is in part decomposed by the ordinary bacteria of the large intestine with a slow continuous production of lactic acid, which hinders considerably the growth of all anaerobic flora This treatment is always very well tolerated It may be repeated several consecutive days until improvement sets in There are cases, however, which do not respond to this treatment In these cases Ramond uses lavage with hydrogen peroxid

It should not be forgotten, however, that therapeutics is a question of opportunity When the infection appears to be almost under control the diet should be modified, otherwise the diarrhea will persist and the patient's strength decline It is well at this time to increase the food and in many cases to change the diet Ramond does not hesitate, after two or three days of carbohydrate diet, to give the patient albuminoid food in the form of raw or rare meat, or even milk products These various substances increase the normal intestinal secretion, which is perhaps one of the greatest factors in recovery It is even probable that for a similar reason acids and bile have some efficacy in the treatment of enteritis He therefore prefers to prescribe them during the course of the disease rather than at the beginning

ACUTE NEPHRITIS AMONG THE TROOPS IN THE FIELD

At a recent session of the Reunion medico-chirurgicale de la X-e armee, Drs J Parisot and Ameuille called attention to the cases of acute nephritis which are becoming more and more frequent in the French army (The Journal, Dec 18, 1915, p 2181) There were few or no cases at the beginning of the campaign, but there are now a formidable number of them As Dr J W MacLeod has observed, they are increasing in frequency in the British army similarly Some of these cases are accompanied by edema and anasarca with heavy albuminuria and the patients recover readily under a suitable salt-poor diet A large number present no edema but manifest a very severe headache similar to that of meningitis respiratory troubles etc., which incline the diagnosis in another direction These latter forms, the very serious ones, are often unrecognized at the outset It is therefore necessary for regimental physicians to investigate urinary albumin as methodically as they investigate increase in temperature Finally there are also a certain number of cases of temporary acute nephritis without edema or serious complications which are characterized by transitory albuminuria and brief malaise They would be found more frequently if they were systematically sought for The etiology of these cases is very obscure There is only one striking factor which is that almost all the patients have been at the front a long time Some have not been away for sixteen months and it may be thought that the campaign is decreasing the resistance of the kidney to the point at which it is incapable of withstanding aggressions which are not usually considered as factors in nephritis Dr MacLeod says that it was during February 1915 that the rather large number of soldiers affected with nephritis in the British army began to be noticed The number increased up to July This increase could not be explained by the arrival of reinforcements since these cases of nephritis were observed particularly in soldiers who had already spent six months in France A division which had been in France since the beginning of the war had forty times more cases of nephritis in May, June and July than another which had been there only three months The cases observed were nephritis with edema especially transitory edema Cylindrical casts were observed in 60 per cent of the cases and blood in one half of them The disease is benign There is about one death in 300 cases The causes are variously stated as (1) mere chilling, (2) chilling plus chemical intoxication, (3) chilling plus microbic intoxication, (4) direct bacterial infection of the kidneys Although these cases increase in number in summer some still believe that mere chilling is an important cause because in summer the difference between the day and night temperature is greater than in winter It may be objected that in South Africa this difference is often greater and that, notwithstanding there were few cases of nephritis in the Boer war Chemical intoxication may also be largely dismissed as a cause. The food has been better supervised than in the Boer war Chemical analysis has shown the presence of no metallic or organic poisons in the food or in the drink Possibly however, further researches may show something new The use of water disinfected with sodium hypochlorite should be mentioned but there are two arguments against this as a cause of nephritis (1) Indian troops which drink chlorinated water have no nephritis, (2) during the Civil War when chlorinated water was not employed, cases of nephritis were as frequent as in the British army today

LONDON LETTER

LONDON, Feb 7, 1916

The War

THE ZEPPELIN RAID

A fleet of six or seven Zeppelins flew over the eastern and midland counties of England January 31, and dropped over 300 bombs, some on rural places, and others on towns The latest returns show that 26 men, 28 women and 7 children were killed, and 48 men, 46 women and 7 children were injured Serious damage was done to three breweries, three railway sheds one engine shed, one tube factory, one lamp factory, and one blacksmith's shop Minor damage, such as the shattering of glass and doors, occurred at a munition factory, at ironworks in two places, a crane factory, a harness factory, a railway grain shed, a colliery and a pumping station No docks, granaries, munition factories or industrial establishments of any sort, other than those mentioned were damaged About fifteen houses of working class people were demolished, and a large number of small shops and dwelling houses were injured, some seriously and many slightly It is not proposed in future to issue detailed statements of this character, as it is inadvisable to give information to the enemy as to the results of their air attacks On the occasion of this raid, however, in which the largest number so far of airships have been employed, it is stated that this statement of the damage done is given in order to show how unfounded is the claim that the economic life of Great Britain or its military preparations can be appreciably affected by promiscuous bomb dropping from airships wandering over the country in the dark In the twenty-nine raids, great and small that have taken place over Great Britain since the war began 133 men (of whom 17 were soldiers), 90 women and 43 children have been killed In one house a man and his wife, with their daughter and son-in-law and their two children were killed instantly The bombs fell on the footpath of the narrow thoroughfare, smashing in the front of the house The occupants, who were sitting round the fire were mangled beneath the ruins, their bodies being recovered later by the police A boy walking along the street received the full force of the explosion and was killed on the spot, while a man standing in front of his house some distance away also met with instant death In another case a man was carrying on his business in a small shop, and the place collapsed and he was killed One of the bombs, falling in a field made a hole 6 or 7 feet deep and 10 feet square Another bomb fell in front of a public house and demolished it but the landlord, his wife and their two sons had a wonderful escape Every window in the house was blown out, the doors were torn from their hinges the roof fell on the inmates in their beds and the licensee and his wife were injured For a time they were pinned in their room by the wreckage

MOTOR ACCIDENTS IN THE DARKENED STREETS

In consequence of the lighting restrictions because of the Zeppelin raids there has been a noticeable increase in the number of fatal street accidents in London In the case of tramway cars the increase is given as 135 per cent In 1913 the fatal street accidents were 579, in 1914, 637 and in 1915 867 During the first week of this year 22 people were killed in London streets in the second week, when there was a succession of moonlight nights, there were 15, and in the third, there were only 13

"TRENCH FEET"

The numerous cases of gangrene of the feet which occurred in the first winter of the war in consequence of the men standing for many hours in cold water or mud, has given rise to a serious problem At the Royal Institution Leonard Hill, the physiologist delivered a lecture on the "Science of Clothing and Prevention of Trench Feet" He controverted the prevalent idea that cold is the cause of much illness, and said that our defensive measures against it had gone too far Cold increased the metabolism of the body and therefore promoted the joy of life The variations of temperature against which people were at pains to protect themselves were beneficent and danger lay in windless or stagnant air and in the skin being the same temperature all over Men in our army who had been accustomed to sedentary lives in a confined atmosphere gained in appetite, growth and color under exposure, but they were subject to the danger of trench foot which was due not only to rapid cooling of the surface but of the whole limb, especially through water soaking into the tissues and damaging their vitality Grease could be used to keep the water out, and the natural grease in the skin also helped, but when boots were full of water for prolonged periods the grease got used up, and the tissues, being penetrated by water, were attacked by bacteria He commended the Italian method of covering the feet with a fabric soaked in grease to prevent the water from entering the tissues If the soldier was standing in mud, the place in which he stood became to some extent warmed, and this gave a certain degree of protection, but in running water the conditions were much worse The problem was how to keep out both wet and cold, and in regard to temperature there was not so much importance in the kind of fabric for clothing as in its capacity for retaining dry air He described and illustrated the garments used in Labrador The footgear consisted of elastic, watertight skins in two or three layers, which held dry air In contrast with this excellent method was the army boot which was hard and close fitting and had plenty of metal to increase its conductivity Some form of wader on the Labrador principle, in combination with stockings soaked in oil, was to be recommended

THE MAN WHO MADE QUININ CHEAP

Sir C Markham has died at the age of 85, from burns due to a fire caused by reading in bed by candlelight He entered the navy in 1844, and served in the Franklin search expedition in the arctic regions He was a great traveler and writer on geographic subjects In 1852 he made his first visit to Peru, mainly to inquire into the remains of the Incas When the government of India perceived the value of quinin in malaria, it determined to introduce the cinchona plant into that country from Peru Sir Clement Markham was entrusted with the task, which he carried out most successfully, with the result that the price of quinin was reduced from many shillings to a few pence per ounce The service thus rendered by him to humanity has been everywhere recognized

BERLIN LETTER

Berlin, Jan 26, 1916

The War

THE BLINDED SOLDIER

Among the badly injured and crippled soldiers those who have become blinded are receiving considerable attention Measures have been adopted to make easier the lot of these unfortunates The government has decreed that every blinded soldier will receive a yearly pension of 1,368 marks ($342), noncommissioned officers receive from 60 to 360 marks additional The annual pension of a blinded officer is at least 4,000 marks ($1,000) Many of these unfortunates are also entitled to the invalids' pension provided for by the workmen's compensation laws Every blinded soldier who, previous to his admission to the army, was engaged in an occupation coming under the compensation act may demand the legal pension, which is not less than 150 marks ($37 50) per year, and may be as high as 300 marks ($75) Private donations have helped to raise the funds necessary to meet these expenditures The call issued in March, 1915, asking for donations, has been answered to the extent of 2,750,000 marks ($687,500) The fund for the blind, established by the German Society for National Education, which has amounted to about half a million marks ($125,000) purposes to assist the blind until such time as the state assumes the obligation by giving them suitable employment They will be taught how to write so that they can qualify for telephone operators, typists and masseurs Those who are musically inclined will be given instructions in music The medical men have raised some objection to increasing the number of masseurs because there are already too many, and the blind masseurs might not be able to secure any employment, although in Japan they have as much work as they can do It was pointed out, however, that conditions in Japan are entirely different from what they are in Germany

Another organization interested in this work is the Society for the Blind, whose headquarters is in Hamburg This society will interest itself particularly in taking care of the blind soldiers when they leave the hospitals but are still convalescing and unable to take any employment It is planned to form small groups, each group being in charge of a blind person who is thoroughly trained in this work, and send them to some *Pension* for from four to six weeks with the object of restoring the lost mental equilibrium so that the soldier will be placed in position where he can return home and take up the work of learning such trade as he may wish with energy and a mind at rest Prussia has sixteen institutions for the blind In 1910 there were 4,000 inmates In the same year there were 21,000 blind in Prussia

NUTRITION OF CHILDREN

Dr Hepner has published observations made in regard to the state of nutrition of the children of Mannheim who are just entering on school life Comparing 500 children who entered school at Eas er, 1914, with a similar number for 1915, he found that the average weight for 1915 was exactly the same as for 1914

THE FOOD PROBLEM

The increased cost of provisions has raised the hospital rates at many points At the Schoneberger hospital the price for the residents of the city has been raised 50 pfennige (about 12 cents), and for nonresidents 1 mark (25 cents) per day, so that hereafter the day rate will be 3½ marks (88 cents) and 4½ marks ($1 13), respectively This increase is trifling

There has to be some restriction in the use of fat and butter It goes without saying that every one must practice economy and exercise good judgment and even suffer some restriction in the use of all kinds of provisions, and there naturally must be a slight increase in their price That starvation is still a remote problem is shown, further, by the food given to prisoners of war The daily rations provided for some time ago have remained unchanged Every person receives daily 90 gm of albumin (formerly 85), 30 gm of fat (formerly 40), 500 gm of carbohydrates (formerly 475), and 10 per cent is added for persons who are working, or such as are poorly nourished The government purchased the more essential food products and staples outright through the ministry of war, so that each prison camp is placed on the same basis, so far as food is concerned, and there is no misuse of anything sent to them Germany is now taking care of about 1,500,000 prisoners of war, and to feed these there are required daily about 600 head of cattle, 900 hundredweights of bread and 30,000 hundredweights of potatoes The letters sent home by prisoners of war show that very few of them have lost in weight since their capture In many of the prison camps the meals are prepared and served from a central kitchen In a few the cooking apparatus is of the most modern kind, such as steam cooking Most of them use the "kettle over the fire" method, each kettle having a content of about 500 quarts Some camps have their own bakeries, and often kill their own cattle The principal meal is served at noon It consists of potatoes, vegetables and meat Twice each week fish is served instead of meat For example, the meals for Sunday consist of breakfast—300 gm of bread, 5 gm of coffee, 10 gm of chickory, and 25 gm of sugar, dinner—120 gm of beef (with bones), 300 gm of kohlrabi or carrots, and 750 gm of potatoes, supper—200 gm of bread and 100 gm of cheese Monday breakfast—300 gm of bread, soup with 50 gm of corn flour, 35 gm of sugar and 100 gm of skimmed milk, dinner—150 gm of fish, 750 gm of potatoes, 30 gm of soja bean oil, and 50 gm of horseradish, supper—soup with 30 gm of barley, 30 gm of soja bean flour, 100 gm of margarin, and 400 gm of potatoes The cost per day is 66 pfennige (16 cents) for privates and 1 mark 40 pfennige (34 cents) for officers

Association News

BY AUTOMOBILE TO DETROIT

Arrangements by Subcommittee on Automobiles

Detroit, first among the cities of America in the production of automobiles, estimates that 705,000 automobiles were manufactured within its limits in 1915 It is not surprising therefore, that the city takes an interest in maintaining excellent roads, and offers country drives which extend in every direction beside lakes and rivers, and over the hills, to numbers of charming resorts, as well as to cities and villages

The fine roads will tempt physicians to use their automobiles in going to Detroit from great distances, certainly from cities as far off as Buffalo, Chicago or Cincinnati In order to assist these physicians to find the accommodations they need, the local Committee on Arrangements has appointed a subcommittee on automobiles, and suggests that physicians who desire to make reservations of garage space, or who need advice concerning other matters of interest in connection with going to Detroit by automobile, address the chairman of the subcommittee at 33 High Street, East, Detroit It is desired to arrange for these reservations at as early a date as possible The rates for service are stated to be

Storage, 24 hours	$0 75 to $1 50
Washing and polishing cars	1 50 to 2 50
Labor on repairs, etc	75 per hour

Marriages

Francis Henry Boucher, M D, to Miss Marie Elizabeth McKeever, both of Marshalltown, Iowa, in Mason City, February 12

Albert O Holmes, M D, Long Beach, Calif, to Miss Sadie O Worley of San Bernardino, Calif, February 19

William Edgar Holland, M D, Fayetteville, Pa, to Miss Nettie Schaal of Waynesboro, Pa, February 7

Hatley Norton Mason, M D, to Miss Frances Lockert Bemiss, both of Richmond, Va, February 15

Eugene Phillips Neitz, M D, to Miss Winifred Gladys Shurtleff, both of Cleveland, February 22

Edward Scott O'Keefe, M D, Lynn, Mass, to Miss Ruth Evans of Boston, January 4

Deaths

Robert Allen Blood, M D, George's Mills, N H, Harvard Medical School, 1870, aged 77, a member of the Massachusetts Medical Society and president of the Association of Military Surgeons of the United States in 1902, a veteran of the Civil War, surgeon general of Massachusetts from 1896 to 1904 when he was retired with the rank of major general, after his retirement, appointed surgeon in chief of the Massachusetts Soldiers' Home, Chelsea, died suddenly at his home February 21

Hugo Philler, M D, Minneapolis, University of Greifswald, Germany, 1861, aged 78, formerly a member of the State Medical Society of Wisconsin, local surgeon of the Chicago, Milwaukee and St Paul System at Waukesha, Wis and health commissioner of the city, assistant surgeon of the Forty-Fifth New York Volunteer Infantry during the Civil War, for eight years a resident of Minneapolis, died in the Minnesota Soldiers' Home in that city, February 17

Rufus H Smith, M D., Seattle, Wash, College of Physicians and Surgeons, Baltimore, 1877, aged 64, a retired practitioner and capitalist, who had resided in Seattle since 1899, for six years chief surgeon of the Great Northern and Columbia and Puget Sound railroads, a member of the legislature from King County and president of the Senate in 1903, died in the Seattle General Hospital, February 12

John R Williams, M D., White Pigeon Mich, College of Physicians and Surgeons, Chicago, 1886, aged 66, a member of the Michigan State Medical Society and formerly president of the St Joseph County Medical Society, and vice president of the Tri-State Medical Society local surgeon of the Lake Shore and Michigan Southern Railroad at White Pigeon, president of the St Joseph County Board of Health, died at his home February 16, from heart disease

Charles Magill Schindel, M D., Omaha, Bellevue Hospital Medical College, 1887, aged 52, a member of the Nebraska State Medical Association, president of the Live Stock National Bank from 1907 to 1909, and for several years president of the board of education, who went West on account of his health about six weeks before, died in Spokane, Wash, February 11, from cerebral hemorrhage

William B Church, M D., Gary, Ind, Eclectic Medical Institute, Cincinnati, 1866, aged 78, assistant surgeon of volunteers during the Civil War, formerly professor of physical diagnosis in the California Medical College, San Francisco, and professor of didactic surgery in his alma mater, for many years a practitioner of Michigan but since 1911 a resident of Gary, died in Chicago, February 16

William McKay, M D, Reserve Mines, N S, Bellevue Hospital Medical College, 1873, aged 68, formerly president of the Cape Breton (N S) Medical Society and of the Nova Scotia Medical Association, for seven years a member of the legislature of Nova Scotia from Cape Breton and at the time of his death a member of the Canadian Senate, died at his home, November 8, from heart disease

William L Kneece, M D, Baxter, S C, Medical College of Georgia, Augusta 1883, aged 64, a Fellow of the American Medical Association and a charter member, and for several years president of the Lexington County (S C) Medical Society, for more than thirty years a practitioner and druggist of Baxter, died at his home, February 4, from cerebral hemorrhage

John F DeBra, M D., Dayton, Ohio, Medical College of Ohio, Cincinnati, 1870, aged 78, for half a century a practitioner, the first part of his time having been spent as acting assistant surgeon, U S Army at Fort Reno, Okla, for more than twenty years a practitioner of Dayton, died at his home in that city, February 14, from cerebral hemorrhage

Stephen F Carpenter, M D, St Joseph, Mo, University of Louisville, Ky, 1871, aged 70, formerly a member of the Missouri State Medical Association and professor of theory and practice of medicine in the Ensworth-General Medical College, St Joseph, from 1884 to 1886 a member of the city council, died at his home, February 15, from cerebral hemorrhage

Anthony Freeland, M.D, Ottawa, Ont., Queens University, Kingston, Ont, 1889, aged 59, who retired from practice in 1902 to become collector of customs for the port of Ottawa, a member of the Separate School Board, died at his home, November 3, from angina pectoris

Perry Joshua Payne, M D, Portland Ore, Rush Medical College, 1904, aged 44, a Fellow of the American Medical Association, for five years physician and physical director of the Portland Academy and for the last two years medical inspector of the Portland public schools, died in the Good Samaritan Hospital, Portland, February 12, from pneumonia

C Ash Levering, M D, Ashland, Ohio, Starling Medical College Columbus Ohio 1888, aged 49, county treasurer of Ashland County, Ohio, for two terms and thereafter cashier and vice president of the Ashland Bank and Savings Company, died in the Samaritan Hospital, Ashland, February 13, six days after an operation for appendicitis

James Edwin Medden, M D, Seneca Falls, N Y, Long Island College Hospital, Brooklyn, 1895 aged 56, a member of the Medical Society of the State of New York, formerly president of the Seneca County Medical Society, a member of the board of supervisors of Seneca Falls, died at his home, February 11, from septicemia

William Ernest Morris, M D, Lisbon, Ohio, Toledo (Ohio) Medical College, 1900, aged 56, a Fellow of the American Medical Association, a charter member and for many years secretary and treasurer of the Columbiana County Medical Society, died at his home, February 18, from acute suppurative otitis media and pneumonia

David P Miller, M D, Huntingdon, Pa, Jefferson Medical College, 1864, aged 79, a charter member of the Huntingdon County (Pa) Medical Society, surgeon of volunteers during the Civil War, local surgeon of the Pennsylvania System, and Huntingdon and Broad Top Railroad, died at his home, February 16 from uremia

Oscar G Singleton, M D, Fort Valley, Ga, Vanderbilt University Nashville, Tenn, 1891, aged 58, a Fellow of the American Medical Association local surgeon at Fort Valley for the Central of Georgia Railroad, while returning from Macon, February 12, was instantly killed by the overturning of his automobile

W W Anderson, M D, Summerton, S C, Medical College of the State of South Carolina, Charleston, 1868 aged 71, for many years a practitioner of Statesburg S C, but for the last quarter of a century a resident of Summerton, died at the home of his daughter in that place, February 9

James Mecray, M D, Cape May, N J, University of Pennsylvania, Philadelphia, 1865, aged 73, a member of the Medical Society of New Jersey, a veteran of the Civil War, formerly councilman and city treasurer of Cape May, died at his home, February 9, from cerebral hemorrhage

Alanson George Aldrich, M D., Anoka, Minn College of Physicians and Surgeons, Baltimore, 1879, aged 59, a Fellow of the American Medical Association, a specialist on diseases of the eye, ear, nose and throat with offices in Minneapolis, died at his home, February 19

Hiram A Barber, M D, Hastings, Mich, Hahnemann Medical College, Chicago, 1881, aged 73, a veteran of the Civil War and once health officer of Hastings, died in a hospital in Grand Rapids, February 21, several weeks after a surgical operation

Lewis W Finch, M D, Eupora, Miss, Memphis Hospital Medical College, Memphis, Tenn, 1902, aged 36, formerly a Fellow of the American Medical Association, a member of the Mississippi State Medical Association, died at his home, February 15

Thomas S Dekle, M D, Thomasville, Ga, Medical College of Georgia, Augusta, 1868, aged 73, a Confederate veteran and one of the oldest residents of Thomasville, died at his home in that place, February 12, from pneumonia following influenza

Alfred M Young, M D, Salem, N Y, Albany (N Y) Medical College, 1862, aged 79, a Fellow of the American Medical Association, for many years health officer of Salem, died at his home, February 16, from disease of the kidney

D H Hall, Chattanooga, Tenn (license, Tennessee, 1889), aged 85, for more than sixty years a practitioner of the Sequatchie Valley, Tenn, died in the Woolford-Johnson Sanitarium, Chattanooga, February 17, from pneumonia

William F Bedell, M D, Jacksonville, Fla, New York University, New York City, 1867, aged 76, formerly of Brooklyn, died at the home of his son in Jacksonville, Fla, January 22, from rupture of an aneurysm of the aorta

Joseph Q Cooper, M.D, Centralia, Mo, St Louis University, 1905, aged 34, a member of the Missouri State Medical Association, was shot and killed in Centralia, February 14, in an altercation with the city marshal of Centralia

Wesley Allen, M D, West Newton, Ind, Indiana Medical College, Indianapolis, 1873, aged 79, a Fellow of the American Medical Association and one of the oldest practitioners of Indiana, died at his home, February 22

Richard S Grimes, M D, Lincoln, Neb, Bennett Medical College, Chicago, 1873, aged 63, for thirty-eight years a practitioner of Lincoln, Neb, for several terms physician of Lancaster County died at his home, February 14

Neil Baker Sewell, M D, Buyk, near Wetumpka, Ala, Vanderbilt University, Nashville, 1886, aged 64, a member of the Medical Association of the State of Alabama, died in an infirmary in Montgomery, Ala, February 13

Sumner Edwards, M D, MacMahan, Me, Harvard Medical School, 1915, aged 26, medical house officer at the Peter Bent Brigham Hospital, Boston, died in that institution, January 6, from lobar pneumonia

John Koplitz, M D, Middletown, Conn, Ludwig-Maximilians University, Munich, Bavaria, 1847, aged 93, believed to have been the oldest practitioner of Connecticut, died at his home, February 10

George Robert Dunlap, Kendallville, Ind (license, Indiana, 1897), aged 83, a practitioner of Kendallville for forty-four years, died in the Noble County Infirmary, January 24, from cerebral hemorrhage

John C Krieger, Jr, M D, Cincinnati, Medical College of Ohio, Cincinnati, 1888, aged 65, a well known alienist, died in the German Deaconess Hospital, Cincinnati, February 10, from nephritis

James W Conger, Talmage, Neb, formerly of Burr, Neb (license, Nebraska, 1891), aged 85, for more than half a century a practitioner of Nebraska, died at his home, January 26

Allen E Baker, M D, Auburn, N Y, New York Homeopathic Medical College, New York City, 1888, aged 53, died at his home, December 15, from chronic interstitial nephritis

Wilbur A Beard, M D, Chicago, Hospital College of Medicine Louisville, 1901, New York Homeopathic Medical College, New York City, 1904, aged 39, died about February 2

Bartley B Yost, M D, Rowley, Iowa, St Louis College of Physicians and Surgeons, 1898, aged 43, also a graduate in pharmacy, died at Glenville, Los Angeles, Calif, February 7

Thomas C Hightower, M D., Campti, La, Louisville Medical College, 1898, aged 41, a member of the school board and town council of Campti, died at his home, February 2

William A McCallister, M D, Centralia, Mo, Missouri Medical College, St Louis, 1879, a Fellow of the American Medical Association, died at his home about February 16

John William Dorough, M D, Girard, Ala, Atlanta (Ga) Medical College, 1894, aged 48, formerly a practitioner and druggist of Tallassee, Ala, died at his home, February 6

Walter Morris Litchfield, M D, Salamanca, N Y, University of Buffalo, N Y, 1886, aged 53, well known as a physician and oil producer, died at his home, February 9

W D Wright, M D, Powder Springs, Ga, Atlanta (Ga) Medical College, 1884, aged 66, died at his home near Lost Mountain, Ga, February 4, from cerebral hemorrhage

Ellis Augustus Squier, M D, Frankfort, Ind, Eclectic Medical Institute, Cincinnati, 1888, aged 67, died at his home, February 14, from pneumonia

Lucius J Landes, M D, Grand River, Iowa, Marion-Sims College of Medicine, St Louis, 1892, aged 48, died at his home, November 5, from embolism

F H Morton, M D, Okmulgee, Okla, Memphis Hospital Medical College, 1901, aged 42, died at his home, February 8, from pulmonary tuberculosis

August Hilary Meath, M D, Chicago, Rush Medical College, 1888, aged 53, died at his home, February 16, from lobar pneumonia

James E Blaydes, M D, Covington, Tenn, Jefferson Medical College, 1862, aged 80, died suddenly in Covington, February 7

Humphrey Fall Brackett, M D, Brighton, Boston, Boston University School of Medicine, 1884, died at his home, January 31

Francis O Reddin, M D, Hamler, Ohio, Louisville, (Ky) Medical College, 1890, aged 53, died at his home, February 12

W H Owen, Nashville, Tenn (license, Tennessee, 1910), died at his home, February 1

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

"DRUG REFORM"

As it Appears to the Cleveland Medical Journal

The matter which follows appeared originally as an editorial in the *Cleveland Medical Journal* It expresses, we believe, the attitude of the thinking physician toward the subject discussed

Physicians have come to the realization that drugs are as a two-edged sword—under proper conditions, striking against the disease, otherwise, against the patient's health The first condition for their proper use is adequate knowledge of their composition and purity, of their actions and malefactions, their field and limitations Slowly and painstakingly—sometimes painfully—this scientific knowledge has been gathered, is still being gathered, by chemists and pharmacists, pharmacologists and clinicians, with increasing thoroughness, care and discrimination

Where wisdom fears to venture, unwisdom and cupidity find ample room The wise physician knows that there are ills that drugs cannot cure, that drugs generally only aid or relieve, and that to obtain even this aid efficiently and safely, the existing scientific knowledge is none too great Not so the unwise He who sees in disease only a name, to him a name is a sufficient cure Let there be a mixture with a convenient and suggestive name and a pleasant taste, a compendious index of diseases and symptoms—and a lively imagination—and the cure is accomplished Few things could be easier, and few more false It is not surprising that the "man on the street" should fall into these errors, it is sad that any physician should be misled by the sophistry of interested drug vendors

Physicians have the moral obligation to instruct the public in matters of health Preaching before practice is of little avail It behooves the medical profession to make at least a reasonable effort to clean its own house before it passes the broom to the public Realizing this responsibility, the American Medical Association some years ago established its Council on Pharmacy and Chemistry This Council is strictly an educational agency—it collects and disseminates knowledge about drugs, especially those drugs that are advertised to physicians and that are not described in the legal pharmacopeias *Physicians are thus put in a position to discriminate* Many have done so, others will, a few may never see the light on this earth

Journals can no longer claim that they mislead their readers in good faith Some—the *Cleveland Medical Journal* among the first—have frankly acknowledged their obligations, and sacrificed a lucrative income from advertisements, others are still occupied in compounding the matter with their conscience Manufacturers are in a similar position Those who are on the side of scientific progress—or to put it materially, those who realize that honesty is the best policy—are taking the opportunity to separate themselves from the dishonest and ignorant

Altogether, the medical profession may safely advise the public on the subject of drugs without laying itself open to the charge that it preaches what it is unwilling to practice

Meantime, the public itself has had a somewhat similar awakening The progress of the profession has necessarily spread more or less to the laymen All sorts of educational agencies have been working to convince the public that individual and national health is too precious an asset to be entrusted to any quack who may spell his praise in printer's ink. Legislators have passed food, drug, and anti-narcotic laws which have aroused interest and discussion Even the "drugless cults" have somewhat offset their harm by causing the public to reflect that drugging is not a panacea for all ills. All this has not been without effect. The public is in a receptive mood; it is not convinced but wishes to learn. Legislators are prepared to follow public opinion. The purveyors of patent medicines are watching events.

What, under these conditions, should be the attitude of the medical profession? Plainly it should continue to be what it always has been: to stand aggressively for the protection of the public health, without any compromise. In doing so, it is true, physicians will expose themselves to the imputation of selfish motives. Selfishly commercial minds cannot or will not understand the unselfish ideals of a profession—that is their loss. Physicians, however, must be careful not to give a semblance of reason to the charge, for that would diminish the effect of their attitude. They must confine themselves to informing the public of the facts, and to guarding the health of the public at large, and of their own patients in particular.

No one in a free country, can force a diseased individual to seek effective treatment or prevent him from using an ineffective treatment, unless his disease imperils the health of others. At that point, and not before, the government can and should take personal measures. However, it is a well recognized function of the government to protect individuals against their own ignorance. It does this when it forces the child to go to school, it does this when it places the swindler in jail.

On exactly the same principal the government has the right and the duty to protect the uninformed public against the flagrant evil of the patent medicine traffic—and the patent medicine traffic as now carried on is a flagrant evil and series of evils. The government should protect the public against advertisements that are framed to suggest or create imaginary ailments with their attendant miseries, it should protect the public against being deluded by false promises of cure, against the specious relief that merely hides the disease and blinds the patient to its dangers, against drugs that may and do work positive harm, against the veil of mystery that makes these abuses possible.

The individual layman cannot protect himself against these dangers and has a right to expect that the government will prohibit the indiscriminate sale of any medicine that may be harmful to him. He has a right to expect, when the government permits the sale of a patent medicine, that the medicine will do him no harm, just as he has a right to expect that any physician whom the government permits to practice should be competent.

These are some of the reasons why physicians oppose patent medicines as they are now exploited, and for these reasons, physicians should take an absolutely uncompromising attitude, and use every opportunity to educate the public. The patent medicine interests naturally try to obscure the issue. By the art in which they are so skilful, they aim to suggest to the public that physicians are opposed to patent medicines in order to drive patients to their offices. They "forget" to mention that physicians have never conducted a "campaign" against really efficient preventive public-health measures, no matter how many prospective patients were involved. No physician has ever refused to give diphtheria antitoxin because this would diminish the number of his visits. A short memory is a very convenient asset for self-interested persons. It is not so convenient for the public—but it is all too frequent. Physicians must, therefore, make it plain that their stand is not against patent medicines, but for the protection of the health of the public.—*Cleveland Med Jour*, November, 1915.

Conservation of Human Health.—Our government has conserved about everything in our country except human health. It conserves the streams, its lands, its forests, and its animals, but man, for whom all these things should be conserved, is neglected or left for the last consideration.—John W. Duke, *Jour Oklahoma State Med Assn*, February, 1916.

Correspondence

Strontium Salicylate versus Sodium Salicylate

To the Editor:—My attention has been called to an article by Dr. M. A. Blankenhorn (THE JOURNAL, Jan. 29, 1916, p. 331) in which the author quotes the eleventh edition of Wood's "Therapeutics" and the eleventh edition of my book on therapeutics concerning strontium salicylate as being a satisfactory substitute for sodium salicylate, chiefly on the ground that it is less disagreeable to the taste and less irritant to the stomach than the latter drug. He attempts to controvert this view. He also says that the statements made have been "lugged along" from one edition to another from no well established starting point, although, in the quotation from my book, it is distinctly stated what I, myself, have *found to be facts*.

As THE JOURNAL has called attention to this article in its editorial columns, and as the article in no way controverts the statements made by Dr. Wood and myself, it may not be unwise to point out certain fallacies in the author's experiments and conclusions. He gives a table of twenty-three cases treated with strontium salicylate in combination with equal amounts of sodium bicarbonate. These twenty-three cases in the majority of instances have nothing whatever to do with acute articular rheumatism or any of the conditions in which the salicylates are commonly employed. Out of the twenty-three there are only eight of acute articular rheumatism, and the others vary from cervical adenitis to lobar pneumonia and gonorrheal arthritis. Although the conclusion is reached that strontium salicylate is no better, so far as the stomach is concerned, than the sodium salt, no comparative experiments as to the sodium salt are recorded and nothing is said in regard to the condition of the liver, stomach and intestines in these patients. Some patients suffering from diseases in which these doses were given would vomit even if food was placed in the *stomach. It is* surprising to find that a woman of 48, suffering from lobar pneumonia, who received 20 grains of strontium salicylate every hour until she had taken 160 grains, had only slight antipyresis, slight relief of pain, and nausea, and also it is surprising that a girl of 16 suffering from acute endocarditis experienced only "slight nausea" after she had received 20 grains of strontium salicylate every hour until she had taken 500 grains. Is this not a tribute to the correctness of the statement that strontium salicylate is not irritating to the stomach, particularly when it is recalled that this child also got 500 grains, or more than an ounce, of sodium bicarbonate at the same time? If the author will take 20 grains of sodium salicylate and 20 grains of sodium bicarbonate, while in perfect health, every hour until he has taken 500 grains of each, I think he will find that such a dose will upset his stomach in health to a greater extent than the "slight nausea" which the 16-year-old girl experienced.

So far as I have been able to discover, the paper does not give any facts which justify the conclusion that the mean toxic dose of strontium salicylate is the same as that for sodium salicylate. On the contrary, *it is stated by the author* that it is one-fifth less in strength. Neither Wood nor myself claim that it is any *more effectual in the relief of pain* than the sodium salicylate as is intimated.

In Table 2 the author states that the mean toxic dose of synthetic sodium salicylate is 180 grains and of natural sodium salicylate 200 grains, but earlier investigations published in THE JOURNAL have indicated that there was no advantage in one over the other.

The way to determine whether a drug possesses advantages or disadvantages as compared to another drug is *not to give* it until symptoms of intoxication appear, nor will correct results be obtained by giving one drug in a *series of* cases without giving the other drug in a series of identical cases.

It would seem that the *most important result* obtained from this research is the discovery that a 16-year-old girl with acute endocarditis can take 500 grains of strontium salicylate in twenty-five *hours with* no bad symptoms except "slight nausea" and some "tinnitus," and with the advantage of having marked relief of pain And, furthermore, it would be interesting to discover why a girl of 16 years should receive a toxic dose of anything, and particularly of a drug for which there was no indication, as given in the report

As my clinical experience still leads me to believe that strontium salicylate can be taken by patients who are unable to take sodium salicylate, and as Dr Blankenhorn's experiments actually confirm this view, it is my intention, to use his phrase, to "lug along" this belief until more convincing evidence that it is erroneous is presented

The question as to whether strontium salicylate is better tolerated by the stomach than sodium salicylate hardly justifies the length of this communication, which is intended as a protest against the reaching of dogmatic conclusions based on evidence which is largely fictitious, the result being that the casual reader is misinformed, and discards a drug which, possibly, may render him good service in time of need

H A Hare, M D, Philadelphia

Strontium Salicylate versus Sodium Salicylate—A Reply

To the Editor —Inasmuch as Dr Hare criticizes mainly the methods employed by Dr Blankenhorn, for which I was largely responsible, I may be pardoned for assuming the privilege of saying a few words in defense

From Dr Hare's concluding sentence there emerges at least one clear and direct statement The "protest against the reaching of dogmatic conclusions based on evidence that is largely fictitious" is not easily misunderstood It is to be regretted that Dr Hare was not equally clear in giving the reasons for his sweeping conclusions

So far as I am able to gather from his letter, he bases them on the following "fallacies" that he thinks Dr Blankenhorn committed in his endeavor to compare the relative gastric effects of strontium and sodium salicylate

First That Dr Blankenhorn employed the drug in cases which, "in the majority of instances, have nothing whatever to do with acute articular rheumatism or any of the conditions in which the salicylates are commonly employed" Any one who will glance at the table will be profoundly surprised at this statement, coming from Dr Hare However, even if it were true, it would have no bearing on Dr Blankenhorn's conclusions, unless, indeed, Dr Hare is prepared to demonstrate that the conditions in which he considers salicylates indicated have some peculiar quieting effect on the stomach

Second That no control experiments with sodium salicylate are recorded I can only conclude that Dr Hare must have read essential portions of the paper very superficially, or does he consider as nothing the 400 patients from the Lakeside service, as recorded by Hanzlik?

Third He asserts that "some patients suffering from diseases in which these doses were given would vomit if food was placed in the stomach" This also has no bearing on the present investigation, for these patients did take their food without any disagreeable results until a certain dosage of strontium salicylate was taken

Fourth Dr Hare is surprised that one woman took a total of 160 grains, another woman 500 grains, of strontium salicylate, with only slight nausea He will probably be further surprised by the patient who took 1,300 grains of sodium salicylate before emesis appeared (as reported by Dr Hanzlik) Such cases are exceptional, but not rare Dr Hare may be perfectly correct as to Dr Blankenhorn's personal reaction to salicylates, but why introduce personalities into a scientific discussion?

Fifth Dr Hare states that "the way to determine whether a drug possesses advantages or disadvantages as compared to another drug, is not to give it until symptoms of intoxication appear" The statement appears a little paradoxical At all events, our problem was to determine the relative average dose of the two salicylates which would produce the gastric and other so-called "toxic" side effects of salicylates That would seem to require the determination of the relative doses that do produce these side-effects

Sixth I almost suspect that the great importance which Dr Hare attaches to the case of the young lady of 16 years is intended as a gentle irony However, since he feigns such a lively interest in her, I may add that so far as known, she has recovered completely from the slight nausea and tinnitus, and the "marked relief of pain" which she experienced did *not* prove really deleterious to her We even feel justified in regarding this marked relief as an indication for the use of the drug If Dr Hare feels offended by the words "toxic dose," he may substitute "physiologic dose," as in the present connection they are used synonymously

In conclusion, I venture to plagiarize a part of Dr Hare's own concluding sentence, which I fully endorse

> "The question as to whether strontium salicylate is better tolerated by the stomach than sodium salicylate hardly justifies the length of this communication, which is intended as a protest against the reaching of dogmatic conclusions based on evidence which is largely fictitious, the result being that the casual reader is misinformed"

Torald Sollmann, M D, Cleveland

First Aid in Accidental Wounds

To the Editor —In industrial enterprises, scientific bookkeeping and good records may demonstrate the economic value of a uniform scheme of first aid and a standardized surgical method in the treatment of accidental wounds It is quite possible that the saving may be sufficient to allow increase in wages and diminution in the price of commodities and rates, and even leave a good balance toward dividends and sinking fund

I was recently informed that a great electric railroad company in the West retrenched at the onset of the present war The company employed very few new motormen and conductors, and used every means to keep their old men on duty They were surprised to find within one year a tremendous reduction in the number of accidents This forced retrenchment brought forcibly to their notice the economic importance of trained and experienced motormen and conductors They immediately increased the wages of these more experienced men, and spent more time and money on the preliminary training of new men The saving in money, therefore, was partly used for increased wages and not for avoidable accidents

A number of railroads in this country have for years given first aid instruction, and have developed a wonderfully organized and efficient surgical and medical department Others have not The development of the immediate and efficient care of accidents in mines has been greater than in railroads This information I get from an authority in the Bureau of Mines Many of the large industries which employ thousands of laborers are satisfied that the expenditure of much money on their first aid and medical departments has been an economical one.

The materials and methods employed on these different railroads, and in the mines and industries, differ to a considerable extent Apparently more than one method will accomplish the same good results There seems little question that if the materials could be standardized they could be manufactured at a smaller cost When the methods of first aid and surgical treatment are made uniform, instruction of the layman and the surgeon will be a simpler process

An infection of a simple wound of the finger may prevent an artisan from working for months If efficient treatment will prevent the infections of the simplest wounds and thus shorten the disability, there is no question that in thousands of cases the actual saving will be thousands of dollars

I am not in a position to prove the statements of those in railroads, mines and industries who are confident that their bookkeeping and records prove the economic value of first aid measures and a better organized medical and surgical department.

The object of the American First Aid Conference was chiefly to make a survey and ascertain, if possible, whether these opinions were correct The conference authorized the secretary by a resolution to make this survey The Board of First Aid Standardization, recently appointed by the president of the United States, at its first meeting in Washington requested that the various first aid committees throughout the United States and Canada make their reports to the secretary of the conference The secretary has no funds to help him in this survey and investigation Personal correspondence must be restricted to the minimum on account of lack of time and money As a matter of fact, in a large survey of this kind it is unnecessary Means of communication can be established through circular letters and, much better, through medical journals The secretary is sufficiently interested in the large problem to give to it the necessary time All he asks is the immediate cooperation of those who have had large experience with accidental injuries, and especially surgeons who are connected with railroads, mines and industries Answers to the five questions sent out in the beginning of the survey have been received from about 150 representative surgeons chief surgeons of railroads and their associates and surgeons connected with great mines and industries In many of these answers we have information which demonstrates the efficient development of first aid methods and instruction

Committees have been, or will be appointed to represent the national and interstate surgical associations and also to represent the various state medical societies in the United States and Canada If possible these committees should have the following representative members a surgeon to a railroad or electric trolley company, a mining surgeon a surgeon to some great industry, a civil surgeon interested in the treatment of accidental wounds and if possible, a surgeon who has had some experience with the treatment of wounds in the present war There are now in this country a large number of such surgeons

The committees of national and interstate surgical associations should confine their attention to getting the opinion and experience of their colleagues in their respective societies on accidental wounds

There are here two great questions for investigation

In the first place, it is important to correlate the opinions of surgeons as to what the layman should be instructed to do in case of an accidental wound, what material should be furnished him for this treatment, and where this material should be distributed It seems true that no surgeon would advise the layman to do anything that the surgeon would not do if he could see the wound immediately after the injury It is also true that no one would dream of attempting to instruct the layman to do all the surgeon might Our investigations so far demonstrate that it is of the utmost importance that we come to a conclusion—and at once—as to what these purely first aid instructions to laymen should be and what material should be furnished

Then there is another question in relation to first aid instruction When shall it begin? A colleague of mine is of the opinion that it should begin with schoolchildren

At present first aid lectures are popular Boy scouts are listening to them, young girls and women who have never before thought of these matters are now attending first aid lectures Unfortunately, when we go over first aid instruction on different railroads, mines or industries, and read or hear of the different lectures to Boy Scouts and lay women, we find differences which must necessarily be confusing to the lay mind, and many things are taught to the laymen which, the majority of surgeons feel, may be dangerous rather than helpful.

We cannot hope to standardize unless we get a survey of the experience and opinion up to date.

In the second place, it is important to ascertain and correlate what surgeons do themselves when they have an accidental wound to treat. Here also we find a diversity of methods, both as to material for dressings and drugs for antisepsis Even if there are many methods which accomplish the same good results, it seems possible to pick out one and standardize it. This would not impede an experienced surgeon from any initiative toward further improvement, but it would inform the great majority of surgeons as to what was considered the best now

Undoubtedly conditions are different in railroads, mines, manufactories, on the streets of large cities and in the homes, and in the different railroads, mines and industries, but there seems no doubt that these different conditions can be met with uniformity

The committees of the various state medical societies and those of large cities can make not only the same investigation but also an actual survey of the conditions within their states We should know what railroads, mines and industries have employed first aid methods, and what their results are as compared with those employers of labor who have not These committees should stimulate scientific bookkeeping and good records of the wounds which are being treated today I am informed by more than one chief railroad surgeon that the introduction of first aid methods has reduced the disability of the wounded from 30 to 50 per cent

As far as I know, an investigation of this extent on a single surgical problem has never been attempted before However it comes naturally in the progress of the propaganda of preventive medicine in its broadest sense There never will be a better time than now because, on account of the appalling records of wounds in the war, the interest in wounds is especially keen and widespread On account of the environment of the wounded in war, first aid in military surgery is a much more difficult problem than first aid in peace, but there seems no question that if we develop standardize and make uniform first aid and the surgical treatment of accidental wounds in time of peace, we are accomplishing not only surgical preparedness for a great economic movement but also a preparedness which will demonstrate its usefulness in the emergency of war

Every surgeon can be helpful Every official of a company employing labor should take an interest in this movement It seems practical economic and humane

The following five questions have been submitted to a large number of surgeons In answering them the surgeon must distinguish between what he would instruct a layman to do, and what he would do himself In many of the answers these two points have been confused It will make the secretary's work much less difficult if the answer to each question is typewritten and on a separate page

The different committees should not only accumulate, but also correlate their own material, so that their reports may constitute independent investigations

These completed reports should be sent to the secretary, who will forward them to the Board of Standardization in Washington

The questions are as follows

1 What has been your experience with the most available first aid package and dressing for small and large wounds?

2 What has been your experience with the immediate employment of antiseptics in accidental wounds, what antiseptic have you used, in what strength, and how applied? Have you employed tincture of iodin, if so, how and what have been the results?

3 What in your experience has been the most efficient and most readily applied method of fixation for injuries of (*a*) the upper and (*b*) the lower extremity?

4 Have you considered the construction of a stretcher, which, in addition to serving as a means of transportation of injured, will have appliances for the fixation of the upper and lower extremity, somewhat along the lines of a Bradford splint, or the Gihon naval splint?

5 Please state your views on some liquid ointment dressing which would be available for first aid in large wounds and burns with the object of preventing the usual dry gauze dressing adhering to the wound and rendering subsequent dressings painless

Joseph Colt Bloodgood, M D, Baltimore.
Secretary, American First Aid Conference, 904 North Charles Street

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

VALVULAR ENDOCARDITIS

To the Editor —What is the most recent opinion with reference to the following question? When the auriculoventricular valves become infected and vegetations form on them, how is the infection carried to the valves? Is it by direct inoculation from the circulating blood as it flows over the valves, or is it through the nutrient blood vessels of the heart to the leaflets or valves and thence through the small capillaries which extend for a variable distance into the valves, and thence by tissue spaces, which tissue spaces are analogous to vessels from the standpoint of function? Which one of these roads do the micro organisms travel to produce inflammation of the heart valves, or valvular endocarditis?

William A Jenkins, M D, Louisville, Ky

Answer —It has been the general belief that bacteria settle on the valves from the blood By injecting a suspension of staphylococci containing particles of potato, Ribbert produced endocarditis of the auriculoventricular valves by injury, so he thought, at the lines of contact and implantation of the bacteria there The fact that inflammation so commonly develops along the lines of contact on closure of the valves has been regarded as an indication of implantation of bacteria from the circulating blood That endocarditis may be due to embolism, the bacteria lodging in the vessels and capillaries of the valves, has been suggested as especially likely to occur in the case of recurring inflammation in sclerotic valves in which the arrangement of the vessels might favor embolism Koster (*Virchows Archiv für pathologische Anatomie,* 1878, lxxii 257) was perhaps the earliest advocate of the view that endocarditis may begin as an embolic process, and experimental evidence in favor of this view has recently been produced by Rosenow (*Journal of Infectious Diseases,* 1912, xi, 210), who gives references to the most important original articles bearing on the question asked He found that in rabbits, endocarditis after intravenous injection of certain strains of pneumococci developed on the basis of small hemorrhages into the valves caused, he believes, by the lodgment of cocci in the capillaries of the valves, the avascular structure of which serves to protect the cocci until they grow into clumps, around which fibrin is precipitated It is also suggested that chronic and sclerotic processes in the valves, leading to functional disturbances, may result from hemorrhages into the valves in young persons from the lodgment therein of bacterial emboli, as well as from actual endocarditis as ordinarily understood

INSEMINATION AND CONCEPTION

To the Editor —Under this title (Queries and Minor Notes, The Journal, Feb 5, 1916, p 448), you say that "it is possible for spermatozoa to retain vitality in the vagina for at least seventeen days, even through a menstrual period" Opposed to this statement is the fact that the secretion of the vagina is normally acid, and acid secretion is detrimental to spermatozoa Even the fact that the spermatozoa are contained in an alkaline medium does not in any way help their longevity, for the amount of semen secreted is not sufficient to overcome the acidity of the vaginal secretions Hühner has investigated the action of the vaginal secretion on the spermatozoa According to his results live spermatozoa cannot be recovered from the vagina later than three hours after coitus This should prove conclusively that spermatozoa cannot live in the vagina for seventeen days Perhaps the body of the uterus was meant, but even that is doubtful In this connection allow me to quote from Dr Hühner "In view of the fact that live spermatozoa are extruded from the uterus during menstruation, coitus just before menstruation is not a good time for impregnation In fact, any spermatozoa that have not reached the fallopian tubes, or at least the ostium uteri when menstruation occurs, are lost"

Charles Edward Panoff, M D, Brooklyn

To the Editor —All of the recent studies of the corpus luteum and of the mucous membrane of the uterus at different stages of the menstrual cycle show that ovulation does not occur at menstruation, as stated in your answer to the query on "Insemination and Conception"

The beginning of the newer studies concerning the relation of menstruation to ovulation must date from the first presentation of the Born Fraenkel corpus luteum theory (*Anatomischer Anzeiger,* 1901) The next step was the work of Hitschmann and Adler on the changes in the endometrium during the menstruation cycle (*Zeitschrift für Geburtshülfe und Gynäkologie*) Since this time a number of authors have shown that there exists such a relationship between the endometrium and the corpus luteum that it is possible to tell the condition of one from the histologic structure of the other The functionating corpus luteum is found only in the premenstrual stage of the endometrium Full agreement has not been reached as to just when in the menstrual cycle ovulation occurs, but as the development of corpus luteum must begin almost immediately after the rupture of the graafian follicle, it is generally agreed that ovulation is most likely to occur from seven to sixteen days after the beginning of menstruation The following publications might be mentioned Meyer and Ruge II (*Zentralblatt für Gynäkologie* 1913), Carl Ruge II (*Archiv für Gynäkologie,* 1913, c, 20), J Miller (*Berliner klinische Wochenschrift* 1913, *Archiv fur Gynäkologie,* ci), and Schroeder (*Archiv für Gynäkologie,* ci), Our authors have been slow in presenting this view of the relation of menstruation and ovulation, but in the recent work of Cragin ("The Practice of Obstetrics," 1916, p 88), the view of Fraenkel is given and is the only one mentioned

C S Bacon, M D, Chicago

Answer —While it has long been known that acidity of the lower part—not of the actual secretion—of the vagina is not favorable to the life of spermatozoa, it cannot be definitely stated that the tests cited prove that spermatozoa from the premenstrual insemination are all killed by the vaginal secretion It is known that they have sufficient mobility to reach even the fallopian tubes quickly

The most recent of the observations cited by Dr Bacon seem to be in conflict with each other, namely, those of Meyer and Ruge II, and Schroeder, who assert that ovulation occurs in the time of and after menstruation, while Miller is positive that it occurs just ten days before It appears, therefore, that an answer to the difficult question of the time of conception cannot be attempted on the basis of any of the experimental work cited Statistical studies and clinical observations still seem to furnish the most likely answer Though such studies are by no means in accord, the balance of all evidence seems to show that actual conception usually takes place within a short period after the menses

ARTICLES ON MEDICINE AS A CAREER

To the Editor —Where may I obtain data on the advantages of medicine and surgery as a profession?

C P Blair, M D, Monmouth, Ill

Answer —The following is a list of articles on this subject

The Practice of Medicine as a Career The Army and Navy Medical Service, *Med Rec*, New York, April 24, 1909

The Third Annual Report of the Carnegie Foundation, Washington, D C, discusses medicine as a business, medicine as a profession, ideals of the profession etc

McWhorter Relation of Medicine to Other Professions, Alabama Med Jour, Birmingham, May, 1909

The Choice of a Profession by High School Pupils, Medical Economics, The Journal, Jan 27, 1912, p 298

Allison, W R Commercial Aspect of Medical Profession, *Illinois Med Jour*, May, 1912

Landrum, S H Lights and Shadows in Practice, *Oklahoma State Med Assn Jour*, July, 1913

Vaughan V C Service of Medicine to Civilization, The Journal, June 27, 1914, p 2003

PAREGORIC COMES UNDER HARRISON LAW—PRESCRIPTIONS FOR NARCOTICS MAY NOT BE TELEPHONED

To the Editor —Enclosed find prescription

1 Please give an opinion as to whether or not it comes under the Harrison Narcotic Law

2 Also inform me if I can take prescriptions for narcotics from my doctors over the local telephone

R. G T

Answer —1 The prescription enclosed contains camphorated tincture of opium as one of its ingredients, and therefore comes under the provisions of the Harrison Narcotic Law

2 The law provides that prescriptions calling for narcotics shall be written and signed by the physician who issues them, therefore it would not be legal to fill such prescriptions given over the telephone

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Thoroughness and "Professional Service"—The most ridiculous being in the world is the doctor who, when he himself gets sick, hones and frets for a thorough examination and a well-founded diagnosis in his own case, and who, when he is well, feels his patient's pulse, looks at his tongue, measures out a supposed 5 grains of phenacetin and a guessed-at 3 grains of calomel on the point of the same knife blade that cleans his nails, picks his teeth and cuts his tobacco, and then takes his fee under the pretext that he has rendered "professional service"—Editorial, *Jour Tennessee State Med Assn*, August, 1915

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA Phoenix April 4 5 Sec Dr John Wix Thomas, 200 National Bank of Arizona Bldg Phoenix

CALIFORNIA Los Angeles April 4 Sec, Dr Charles B Pinkham, Room 527 Forum Bldg Sacramento

COLORADO Denver April 4 Sec, Dr David A Strickler 612 Empire Bldg Denver

CONNECTICUT Regular New Haven March 14 15 Sec, Dr Charles A Tuttle, 196 York St, New Haven Homeopathic New Haven March 14 Sec Dr Edwin C M Hall 82 Grand Ave New Haven Eclectic New Haven March 14 Sec, Dr T S Hodge 19 Main St, Torrington

DISTRICT OF COLUMBIA Washington, April 11 Sec, Dr E P Copeland The Rockingham

FLORIDA Homeopathic, Jacksonville, March 10 Sec, Dr J B Griffin, St Augustine

IDAHO Boise April 4 Sec Dr Charles A Dettman Burke

MAINE Portland March 14 15 Sec, Dr Frank W Searle, 776 Congress St Portland

MASSACHUSETTS Boston, March 14 16 Sec., Dr Walter P Bowers Room 501 No 1 Beacon St Boston

MINNESOTA Minneapolis April 4 7 Sec, Dr Thomas S McDavitt 814 Lowry Bldg St Paul

MISSOURI St Louis, March 20 22 Sec, Dr J A B Adcock State House Jefferson City

MONTANA Helena, April 4 Sec. Dr William C Riddell Helena

NEW MEXICO Sante Fe April 10 Sec, Dr W E Kaser East Las Vegas.

OKLAHOMA Oklahoma City April 11 12 Sec Dr Ralph V Smith, 502 Daniel Bldg Tulsa

PORTO RICO San Juan April 4 Sec., Dr Quevedo Baez 66 Allen St San Juan

RHODE ISLAND Providence April 6 Sec, Dr Gardner T Swarts, 315 State House Providence

UTAH Salt Lake City, April 3 4 Sec. Dr G I Harding 407 Templeton Bldg Salt Lake City

WYOMING Laramie, March 14 16 Sec, Dr H E. McCollum Laramie.

South Carolina June Report

Dr A Earle Boozer, secretary of the State Board of Medical Examiners of South Carolina reports the written examination held at Columbia, June 8-10, 1915 The total number of subjects examined in was 16, total number of questions asked 115, percentage required to pass, 75 The total number of candidates examined was 61, of whom 37 passed and 24 failed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Atlanta College of Physicians and Surgeons	(1912)	82 4
Atlanta Medical College	(1915) 77 2, 77 4 77 6 78 1	81 2
University of Georgia	(1915)	75
University of Maryland	(1913) 78 (1915)	77 6
Columbia University College of Phys and Surgs	(1901)	75
Jefferson Medical College	(1915)	85 2, 85 4
Woman s Medical College of Philadelphia	(1915)	93 6
Medical College of the State of S C	(1911) 75, (1915) 77 2 78 2 78 2, 78 4 78 8 79 6 80 4 80 6 81 81 1 81 5, 81 5, 81 6, 83 1, 83 1, 83 4 84 84 2 84 2, 87 1 88	
Medical College of Virginia	(1915)	75
University of Virginia	(1914)	84 7
FAILED		
Atlanta College of Physicians and Surgeons	(1912)	69
Atlanta Medical College	(1914) 67 7 (1915) 61 1 69 8 67 8	73 4
Georgia College of Eclectic Medicine and Surgery	(1912)	59 5
Southern College of Medicine and Surgery	(1913) 60 6 (1914)	64 6
Maryland Medical College	(1905)	71 5
University of the City of New York	(1882)	61 8
Medical College of the State of South Carolina	(1900) 63 2 (1901),* (1911) 72 6, (1915) 71 2	73*
Meharry Medical College	(1914) 70 1 (1915) *,	*
Memphis Hospital Medical College	(1911)	*
University of Tennessee	(1905)	59 1
University of West Tennessee	(1914)	*
Gate City Medical College	(1909)	71 8†

* No grade.
† Graduation not verified

Ohio October Reciprocity Report

Dr George H Matson, secretary of the Ohio State Medical Board, reports that on Oct 12, 1915, 10 candidates were licensed through reciprocity and 2 candidates were granted reregistration licenses The following colleges were represented

College	Year Grad	Reciprocity with
Jenner Medical College	(1912)	Illinois
Rush Medical College	(1913)	Illinois
University of Michigan Medical School	(1913) (1914)	Michigan
Baltimore Medical College	(1898)	Vermont
Kansas City Medical College	(1898)	Illinois
St Louis University	(1913)	Missouri
Eclectic Med Coll of the City of New York	(1896)	New York
Medico Chirurgical College of Philadelphia	(1913)	Maryland
University of Pennsylvania	(1914)	W Virginia

Book Notices

FRACTURES AND DISLOCATIONS DIAGNOSIS AND TREATMENT By Miller E Preston A B, M D First Lieutenant, M R C, U S Army Chapter on Roentgenology by H G Stover, M D Professor of Roentgenology School of Medicine, University of Colorado Cloth Price, $6 50 Pp 813, with 860 illustrations St Louis, C V Mosby Company, 1915

In this concise exposition of the subject, success has attended the author s endeavor to make the reader an eye witness to the various deformities as they appear immediately after the accident He argues that there is much to be learned by inspection in the average case of fracture or dislocation and that the information thus gained may be put to immediate use with a minimum amount of manipulation of the parts and without the necessity of awaiting the returns of a Roentgen examination He maintains that the more one learns by inspection, in establishing a diagnosis in a given case, the less there remains to be determined by palpation, and that if the surgeon develops the faculty of recognizing what he sees, the patient will often be relieved of much unnecessary manipulation and suffering, to say nothing of the damage which may be inflicted on the already traumatized soft tissues In conformity with this belief, the text is profusely illustrated with reproductions of photographs, diagrams and roentgenograms, which appear to have been selected with discrimination and which clarify and enlarge it to a marked extent

The arrangement of the material attracts attention in that the usual custom of classifying fractures under one heading and dislocations under another has been abandoned Instead, the reader finds all the injuries to which a given region is subject, including fractures, dislocations, joint fractures and fracture dislocations, discussed in a single section, and he is not put to the necessity of looking up the different conditions in widely separated portions of the book, or even of consulting other volumes This appears to be a distinct improvement on the older, conventional scheme

In a book of this size it is, of course, impossible to discuss all the theories and arguments pertaining to the subject, or to go into detail concerning all the methods of handling the various lesions This necessitates a somewhat dogmatic style which, harmless as a rule, occasionally leads to the omission of important matter, to detailed description of methods and theories against which serious adverse criticism has been leveled, to failure adequately to describe substitute measures, and to a few apparent inconsistencies Surgeons are committing themselves more and more to the use of plaster in fracture work, and many would find it difficult to agree with the author when he advises anterior-posterior splints in preference to plaster in all fractures of the bones of the forearm Similarly, while the Sayre dressing for fractured clavicle, warmly advocated by the author, is widely used, a number of surgeons of large experience condemn it, and its use has been discontinued in several large clinics We are usually taught that in applying a Buck's extension for fracture of the neck of the femur the adhesive strips should be carried well up on the thigh the better to distribute the tension of the adhesive on the skin and to avoid undue strain on the ligaments and capsule of the knee joint In the apparatus shown in this book, however, the entire weight of the apparatus falls on the leg below the knee Discussing the subject of compound fractures, the author condemns unsparingly the indiscriminate use of antiseptics, and insists on free drainage A few lines further on he advises the injection of liquor formaldehydi and glycerin into suppurating joints without drainage as the first therapeutic measure to be attempted This hardly seems consistent, and certainly is not in agreement with the practice of many conservative surgeons of wide experience

It must be admitted, however, that faults such as those mentioned are few, and hence of relatively little importance There is one adverse criticism which should be strongly emphasized there is no bibliography to direct the thoughtful student or physician, should he desire a more exhaustive discussion of the many phases of fracture work than is offered in the text This is an important omission in a book which deals with a special aspect of surgical practice and which should appeal to the man who happens to need special knowledge of any of the problems which this field offers

Gunshot Roentgenograms A Collection of Roentgenograms Taken in Constantinople During the Turko Balkan War, 1912 1913, Illustrating Some Gunshot Wounds in the Turkish Army By Clyde S Ford, Major, Medical Corps Paper Pp 338, with 163 plates War Department, Office of the Surgeon General, Bulletin No 9 Washington Government Printing Office, 1916

This bulletin is a collection of roentgenograms made by Major Ford, who was temporarily on duty in Constantinople with the American embassy, and on active service both in the cholera hospitals near Constantinople and later in the field with the Bulgarian army during the second Balkan War The plates are printed on heavy paper which gives an acceptable reproduction, and there are descriptions of each They are grouped, first, according to wounds, rifle and shrapnel, and, secondly, according to anatomic region the head, spinal region, upper extremity, chest, pelvis and lower extremity A limited number of the illustrations show the operative interference in gunshot wounds The last plate shows an illustration, two-thirds the natural size, of forty-six different projectiles which were removed from wounds by Major Ford

Appearing just at this time, the bulletin will be of interest to medical men generally and to surgeons in particular, especially those who are called on to treat gunshot wounds involving fractures As the author remarks in the introduction, "The collection of these plates resulted from a systematic visiting of the hospitals of Constantinople in the winter of 1912-1913, during the course of the first Balkan War, and including all of the military hospitals of the military zone, with the incidental purpose of selecting from the roentgenographic plates, which had been prepared wherever apparatus was installed, such examples of the roentgenography of gunshot wounds as might show characteristic lesions without relation to detailed clinical record More than 1,500 plates were examined, and from them more than 200 were selected as exhibiting some lesion that seemed to be characteristic of some form of gunshot wound, even though the case history could not be obtained Some plates are included which are indistinct and generally so unsatisfactory from a technical viewpoint as to be of little interest, if all of them were not intended to show the general character of the diagnostic assistance that the roentgenologist rendered the military surgeon in the base hospitals of Constantinople during the Turko-Balkan War"

In view of the tremendous amount of clinical material now being studied by European surgeons, it is to be regretted that such publications as Major Ford's are not more frequent

Manual of Surgery By Alexis Thomson, F R C S, Professor of Surgery, University of Edinburgh, and Alexander Miles, F R C S, Surgeon, Edinburgh Royal Infirmary Fifth Edition Volume I—General Surgery Volume II—Regional Surgery Cloth Price, $3 50 per volume New York Oxford University Press, 1915

In preparing the fifth edition of this manual, the authors have eliminated all descriptions of operative procedures, which are now included in the third volume They have also omitted discussions of debatable points, and have included new material on recent advances in pathology and treatment The Basle anatomic nomenclature has been adopted, but the old terms are given beside the new ones The discussion of tetanus apparently takes little account of the results of recent studies of the numerous cases occurring in the present war There is no discussion of blastomycosis, although a small amount of space is devoted to madura foot In the diagnosis of syphilis no mention is made of the luetin test, but the discussion of treatment is complete For burns the authors recommend the picric acid treatment as far superior to all others, and warn particularly against the use of moist or greasy applications like Carron oil In practically all their discussions the authors show acquaintance with American and continental surgical advances and refer repeatedly to the work of well-known surgeons The two books are excellently and profusely illustrated

Miscellany

Constitution and By-Laws of the National Board of Medical Examiners for the United States

PREAMBLE

The need of a standard licensing body for the whole of the United States and territories tributary has occasioned the organization of a voluntary board of examiners, selected from the Medical Corps of the Army and Navy and the Public Health Service, with the other members selected from the Federation of State Examining Boards and the medical profession of the United States That the creation of this board may be certain and its continuance assured, it is proposed that it shall be governed by the following constitution and by-laws as set forth

CONSTITUTION

I *Name of Title*—The name of this body shall be the *National Board of Medical Examiners* for the United States

II *Official Domicile*—The domicile of this board shall be in Washington, District of Columbia

III *Objects*—The objects of this board are A The establishment of a standard of examination and certification of graduates in medicine, through which the recipient may be recognized for the licensure in the practice of medicine in the United States, territories, and extraterritorial possessions on presentation of the proper credentials of this board

B A cooperation with the board of medical examiners in individual states, territories and extraterritorial possessions of the United States by which licensure may be effected through registration of the credentials of this board

C A consistent high purpose of determining the qualifications of the candidate before this board so as to create his eligibility to the privileges above defined

D A democratic administration of the operation of this board in its own executive function as well as in its examinations, which are to be conducted by all modern means to accomplish practical, oral and written tests of the candidates' efficiency and qualification

E To hold examinations at the domicile of the board, and at such other locations as may be justified by the number of applicants, their residence, and the facilities for conducting examinations properly

IV *Personnel of the Board*—This board shall initially consist of fifteen members as follows Admiral William C Braisted, General William C Gorgas, General Rupert Blue, Commander Edward R Stitt, Colonel Louis A. LaGarde, Assistant Surgeon-General William C Rucker, Dr Victor C Vaughan, Dr Horace W Arnold, Dr Austin Flint, Dr William L Rodman, Dr Henry Sewall, Dr E Wyllys Andrews, Dr Louis B Wilson, Dr Herbert Harlan and Dr Isadore Dyer

Hereafter the board shall comprise the surgeon general of the Medical Corps of the Army and one other representative of the same service to be appointed by the surgeon general, subject to the approval of the board

The surgeon general of the Medical Corps of the Navy and one other representative of that service to be appointed by the surgeon general, subject to the approval of the board

The surgeon general of the Public Health Service and one other representative of that service to be appointed by the surgeon general, subject to the approval of the board

Three members appointed by the Federation of State Medical Examining Boards, subject to the approval of the board

Six members at large elected by the existent National Board of Medical Examiners

The terms of service of these members of the board shall be as follows The surgeons general of the Medical Corps of the Army, the Navy and the Public Health Service shall continue as members of the board so long as they hold their offices as surgeons general Nothing in this provision shall preclude their reappointment as members of the board

The other twelve members of the board shall serve for six years each, with the provision that the first board shall be so constituted that four members shall serve for six years, four members for four years, and four members for two years, these terms of office to be determined by the Executive Committee The four new members appointed for a term of six years, as provided above, shall be one from the three federal services, one from the Federation of State Examining Boards and two elected by the existent National Board of Medical Examiners

There shall be nothing in this regulation which will prevent any one of the four retiring members of the board succeeding himself, if qualified by proper appointment, but no member of the board may serve more than two successive terms

V *Organization of the Board*—(*a*) The officers of the board shall consist of a president a secretary and a treasurer who, with two members at large all annually elected by the board shall constitute the Executive Committee of the board The secretary need not be a member of the board In such case he shall not vote

(*b*) The Duties of the President The president shall preside at all meetings of the board, he shall direct all business of the board ad interim, he shall be chairman of the Executive Committee, he shall decide all matters of rule and practice not provided for in these regulations and he shall represent, in person or by deputy, the board on all occasions when the board is officially engaged With the secretary or treasurer he may issue and sign all fiscal documents for the disbursement of funds

In the event of absence or death of the president, the board shall elect a chairman who shall in all particulars fill the office of president pro tempore

(*c*) The Duties of the Secretary The secretary shall have conduct of all of the public relations of the board in conjunction with the president and the Executive Committee He shall supervise and direct all arrangements for meetings of the board, examinations of candidates for licensure, and he shall fulfil the office of recorder and keeper of records With the treasurer or president he may issue and sign all fiscal documents for the disbursement of funds He shall be also secretary of the Executive Committee

(*d*) Duties of the Treasurer The treasurer shall be custodian of all funds, he shall deposit all moneys in a national bank in the city of Washington, keeping proper accounts of all receipts and disbursements With the secretary or president he may issue and sign all fiscal documents for the disbursement of funds Before each annual meeting of the board, he shall have a proper audit of his accounts by a qualified accountant, who shall make report through the secretary He shall furnish bond if the board so order

(*e*) Duties of the Executive Committee The Executive Committee in the intervals between board meetings shall transact all business of the board, directing, through the president and secretary, the detail of public announcements and operations as these may relate to the board, its objects, purposes and business The operation of the Executive Committee shall be made a matter of record for report to the board at its stated meetings with a view to ratification, but without necessity of referendum of such business as may be regular or routine and not affecting the policy of the board

The Executive Committee shall hold meetings on the call of the chairman, and as often as may be necessary or advisable

VI *Meetings*—The regular annual meeting of the board shall be held at the domicile of the board on ———— in each year This annual meeting shall be held for the purpose of electing officers, of electing new members, of receiving reports of the several officers, of the Executive Committee, and for the transaction of any other business which may be on the table

Other meetings may be called by the president on his own initiative, and other meetings shall be called on the demand of a majority of members of the board provided such members give the president two weeks' notice of said meeting and provided the president thereafter give two weeks' notice before the date of the called meeting

VII *Amendments*—Amendments to this constitution may be made at any regular annual meeting of the board on thirty days' notice in writing, and on a three-fourths vote of the members present

BY-LAWS

I *Order of Business*

(*a*) Roll call
(*b*) Reading of minutes
(*c*) Communications
(*d*) Unfinished business
(*e*) New business
(*f*) Recommendation of candidates for licensure.
(*g*) Election of licentiates
(*h*) Nomination of officers and members and Executive Committee
(*i*) Election of officers
(*j*) Adjournment

II *Conduct of Meetings*—(Parliamentary rules as set down in Robert's or Cushing s Manuals)

III Dates of examinations for licentiates, regulation of examinations detail of subjects and their assignment, scope and time allowance, shall all be determined by the Executive Committee

IV Amendments to the by-laws may be made at any regular meeting of the National Board of Medical Examiners by presentation in writing and by a two-thirds vote of the members present

Narcotic Drugs

M I Wilbert in *Public Health Reports,* says that heretofore the drug trade and the members of the medical profession generally have been indiscriminately accused of fostering and developing the use of habit-forming drugs This accusation, he believes has been wholly unwarranted, as is shown by the whole-hearted way in which all branches of the drug trade and all classes of medical practitioners have endeavored to live up to the Harrison Narcotic Law The active enforcement of the law has already had a wholesome effect in reducing the sale of narcotic drugs Some of the larger wholesale dealers have reported that their sales have been reduced from 70 to 80 per cent, and retail dealers say that the sales of narcotic drugs and preparations at retail have been materially reduced A few report an increased volume of business The report of the Department of Commerce on the quantity of drugs entered for consumption in the United States for the year ending June 30, 1915, indicates that the amount of such material imported has not varied materially A compilation of the drugs entered from July 1 1914, to June 30, 1915, shows this, and also shows that during the last quarter of the fiscal year when the Harrison Narcotic Law was in effect the proportion of the amount of these drugs imported was greater than the total amount for the year This is accounted for on the supposition that a large amount of the drugs imported were intended for reexportation to countries supplied by Germany before the war Wilbert says that legislatures are beginning to appreciate the fact that the treatment of drug addicts is psychologic and medical, and not a criminal or penologic problem Laws recently enacted by New York, Pennsylvania, Colorado, Connecticut, Illinois, Hawaii and the Philippine Islands require the general practitioner to keep records covering the use of narcotic drugs Wilbert says that these efforts of state governments to regulate the use of narcotics should aim to supplement the requirements of the federal law as to the number and kind of drugs proscribed in order to prevent the possible abuse of any drug Unfortunately, he says, most of the state laws have included clauses similar in effect to Clause 6 of the federal law which permits the use and sale of preparations containing some of the proscribed drugs up to a certain amount Wilbert says that the use and abuse of narcotic drugs should be made to rest squarely with the members of the medical profession, and that drug dealers should not be allowed any degree of discretion as to their disposition even in limited quantities He then enumerates some of the additional requirements that might be well included in state antinarcotic legislation

Medicolegal

Provisions of Medical Practice Act Held Valid

(People vs Tom J Chong (Calif), 151 Pac R 553)

The District Court of Appeal of California, First District, affirms a conviction of practicing medicine without a license in violation of the act of 1913 for the regulation of the practice of medicine and surgery The court says that there was absolutely no merit in the defendant's point that the title of the act under which he was prosecuted was defective The defendant contended that Section 8 of the act is unconstitutional and void in that it is an unrestricted invasion of the art of osteopathy, chiropractic, and mechanotherapy, in that it prevents practitioners of said systems of the healing art from practicing their profession "without in any manner severing or penetrating any of the tissues of the human being" Assuming, as asserted by the defendant, that members of such schools in practicing, as they do, by manipulation and adjustment, are constantly and continually severing tissues of human beings, and that the practice of their art is impossible without it, still it is very plain from a reading of the whole section that the word "sever," as therein used, means a severance by cutting Under one form of certificate the holders thereof, as provided in the act, may not only prescribe and use drugs, but may also sever and penetrate with a knife the tissues of human beings The holders of other certificates are drugless practitioners, and they may not prescribe or use drugs, nor may they operate with a knife or in that way sever or penetrate the tissues of human beings, except that they may sever the umbilical cord Another point urged was that Sections 9 and 10 of the act are unconstitutional and void, in that the board of examiners are vested with power arbitrarily to determine the fitness of applicants and the standard of colleges as a matter of mere personal discretion or approval, without regard to a standard of academic or scientific proficiency or exactness This contention is disposed of by what is said in the cases of Ex parte Gerino, 143 Calif 412, 418, and Ex parte Whitley, 144 Calif 167, 177 It was proper for the legislature to demand some standard of proficiency, and the court thinks it was equally within its power to declare that such standard shall be the one prescribed by the medical board of examiners In the Gerino case an applicant under the act of 1907, in order to be entitled to practice medicine, etc, must have graduated from some college or institution approved by the American Medical Association, while, according to the terms of the act under review, he must be a graduate of some college "approved by the board" of medical examiners The Gerino case and the present one are similar in their facts so far as the point under discussion is concerned, and it must be held on the authority of that case that the contention of the defendant is without merit It may not be amiss to add that by the terms of the present act, unlike the old act, the applicant must not only have graduated from an approved college, but must also have studied for a certain prescribed length of time and have covered certain enumerated subjects, when, if the college from which he graduated is one of those approved by the board, a certificate to practice medicine, etc, will be issued to him These provisions are eminently fair, and certainly not unconstitutional

Liability for Wrong Diagnosis and Treatment

(Just et al vs Littlefield (Wash), 151 Pac R 780)

The Supreme Court of Washington affirms a judgment for $500 damages for an alleged wrong diagnosis and ensuing treatment based thereon The court says that the law is, of course, well settled that a physician is liable for a wrong diagnosis of a case, resulting from a want of skill or care on the part of the physician, and followed by improper treatment, to the injury of the patient but, unless improper treatment follows, a wrong diagnosis gives no right of action It is now well settled that a physician is entitled to practice his profession, possessing the requisite qualifications, and applying his skill and judgment with due care, and is not ordinarily liable for damages consequent on an honest mistake or an error of judgment in making a diagnosis, in prescribing treatment, or in determining on an operation, where there is reasonable doubt as to the nature of the physical conditions involved, or as to what should have been done in accordance with recognized authority and good current practice Whether errors of judgment will or will not make a physician liable in a given case depends, not merely on the fact that he may be ordinarily skilful as such, but whether he has treated the case skilfully, or has exercised in its treatment such reasonable skill and diligence as is ordinarily exercised in his profession There is a fundamental difference in malpractice cases between errors of judgment and negligence in previously collecting data essential to a proper conclusion If he omits to inform himself as to the facts and circumstances, and injury results therefrom, then he is liable In the present case, the defendant and another physician positively determined that the patient was afflicted with tumors Another physician had previously positively determined that she was pregnant, of which diagnosis the defendant was informed, according to the plaintiffs' case. After the defendant's diagnosis, the first physician and another physician consulting with him again examined the patient and determined that she was pregnant, and that she had no tumors, of which diagnosis, according to the plaintiffs' case, the defendant was also informed His response to this was that "the other doctors were crazy" It might well be conceded that the statements made by the patient to the defendant were deceptive, and calculated to deceive She did not believe at the time of her examinations by any of the physicians that she was pregnant The matter of the ethics and propriety of the defendant's conduct in proceeding with the operation without notifying the patient's former attending physician was immaterial But the matter of the defendant's notice that other competent and reputable physicians had positively declared that the woman was pregnant was serious Surely it put on the defendant a greater degree of diligence and care to be as certain as circumstances and conditions surrounding the case would admit of The defendant urged that the incision made was in the nature of an exploratory operation, to determine the true condition of his patient, but he had not the consent of the patient and her husband to make an exploratory operation Having notice of a directly different diagnosis from his, the patient being a married woman of 37 years living with her husband, not being past her climacteric period, it would seem he should not have hastily flouted the opinion of other reputable physicians that she was pregnant, but might have waited for a time, watching developments, making other examinations, and proceeding with considerable deliberation, unless the presence of tumors becoming more symptomatic, or injurious, rendered the operation therefor more imperative At all events, whether he proceeded with due and ordinary care in treating the patient was, under the circumstances, a question of fact for the jury

Power of Foreman to Contract and Receive Notice as to Needed Medical Aid

(Lihopoulos vs Oregon Washington Railroad & Navigation Co (Wash), 151 Pac R 818)

The Supreme Court of Washington affirms a judgment in favor of the plaintiff for damages for failure of the defendant to furnish him hospital treatment, as per its alleged contract with him, after he had been shot in the arm on a day known as Greek Easter, when he and his co-laborers refrained from their ordinary labors There was a rule of the company to the effect that hospital benefits would not be furnished to an employee for injuries incurred in fights and brawls, and it was contended that the foreman who made the contract of hire with the plaintiff was without authority to contract with reference to benefits to be received in case of sickness or injury different from those set forth in the rules of the company But the evidence made it clear, the court says, that the foreman was empowered to take men into employ of the company and discharge them after they had been so employed. Presumptively at least, he was empowered to state the terms of the contract of hire to those whom he hired and if he stated them incorrectly, or even contrary to his instruction any loss caused thereby must fall on the company whose agent he was, not on the person dealing with him as a stranger. Again it was argued that, since the plaintiff was not engaged in the service of the company on the day of his injury he was not under the authority of the foreman, and hence notice to the foreman was not notice to the company, and any lack of attention on the part of the foreman would not bind the company. But the court cannot think this contention tenable. The foreman was the representative of the company with whom the contract of hire was made. He had charge of the force of men of whom the plaintiff formed a part. He was the only agent of the company authorized to deal with the plaintiff which the company had brought to the plaintiff's notice. He contracted with the plaintiff on behalf of the company to furnish him with medical and surgical attendance in case he should become sick or be injured during the time he was in the company's employ. Surely it could not be said under these conditions that his power to represent the company with reference to the contract existed only during the periods of the employment in which the plaintiff was actually engaged in manual labor in the course of the employment, on the contrary, his power so to represent the company continued during the entire course of the employment or until such time as the plaintiff should receive notice from the company that the foreman no longer represented it.

Validity of Joint Indictment for Practicing Medicine Without a Certificate

(State vs. McAninch et al. (Ia.), 154 N. W. R. 399)

The Supreme Court of Iowa affirms a judgment of conviction of the defendants of practicing medicine without a certificate. The indictment charged that J. E. McAninch and C. S. McAninch on or about a certain date, and from that date to the finding of the indictment, did wilfully and unlawfully assume the duties of a physician, and make a practice of treating persons afflicted with disease, and did then and there, wilfully and unlawfully, publicly profess to treat, cure, and heal persons afflicted with disease, by a system of treatment called "Chiropractic," without first having obtained from the State Board of Medical Examiners and recorded in the office of the county recorder, a certificate authorizing the said J. E. McAninch and C. S. McAninch to practice as such, etc. The court, divided four to six, in a lengthy opinion holds the indictment good. It says that a fair analysis of the position of the defendants was that (1) what they were accused of having done jointly could not be done jointly, therefore it was impossible to prove what was alleged, (2) proof that either did what was charged would not accomplish the proving of any joint act, and (3) where a joint act is charged, and the proof is only that either or all of the defendants did the act severally, there can be no legal conviction of either or all under the *joint* indictment. But, for one thing, concede, for the sake of argument that, literally, two men may not be jointly guilty of practicing medicine without first obtaining and recording a certificate required to make the practice lawful. *It is still* possible that one might aid and abet the other in this violation of law, that defendant B, knowing A was practicing illegally, did represent, actively, that this was not so, urged patients to come to A, and actually helped him in carrying on the unlegalized practice. Now, since the Iowa statute provides that, for the purposes of indictment and trial, the accomplice is to be dealt with as a principal, this indictment is sustained by very well considered authorities on the theory that even if the proof shows that A violated the law, and that B aided and abetted him, an indictment charging both to have violated the law is valid. The court also holds it clear that it was right to overrule that part of the defendants' demurrer which presented that the statutes proceeded under are repugnant to the bill of rights, the constitution of the United States, and the constitution of the state.

Society Proceedings

COMING MEETINGS

American Medico-Psychological Association, New Orleans, April 4-7
American Urological Association, St. Louis, April 17-19
Arizona Medical Association, Phoenix, April 26-27
California State Medical Society, Fresno, April 18-20
Georgia Medical Association, Columbus, April 19-21
Louisiana State Medical Society, New Orleans, April 18-20
Missouri Valley Medical Society, St. Joseph, Mo., March 23-24
North Carolina State Medical Society, Durham, April 18
South Carolina Medical Association, Charleston, April 18-20
Tennessee State Medical Association, Knoxville, April 4-6

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Meeting held Jan. 24, 1916

The President, DR. FREDERIC E. SONDERN, in the Chair

Military Preparedness from the Medical Standpoint

DR. E. L. MUNSON, Lieutenant Colonel, Medical Corps, United States Army: The efficiency of a medical service depends on the work done in advance of actual fighting. An army medical department is not an independent scheme, but is subservient to the general plans of the army, and whether these plans work out to victory or defeat depends largely on the efficiency of the medical corps. The medical officer of the army is not engaged in curing disease but in looking after sanitary conditions in advance of a campaign and in bringing together the various relief agencies so that the sick and wounded can be cared for properly. The sanitary plans form a part of the general plan of a campaign. Every possible precaution must be taken to avoid illness and save life. As soon as tentative sanitary plans have been prepared, they must be submitted to the officer having charge of the tactical plans. The medical officer consults all available statistics with reference to the health of the locality in question and the incidence of transmissible diseases. Attention is given to clothing, climate, and a study of the race living in the locality under consideration. All the climatic conditions, temperature, humidity, rainfall and seasonal influences are taken into consideration in the medical plan for the campaign. Based on these all the sanitary details for the military community are worked out. Estimates are made showing how many men might be counted on as in fighting condition and what provision might have to be made for reinforcements to make up for those not ready for duty. Arrangements have also to be perfected for caring for the wounded near the line of battle and for transportation facilities for removing the wounded to base hospitals. The medical man must also be informed of the means of transportation in the vicinity that can be depended on and of all existing hospitals, and also with reference to all lines of transportation carrying the men home and their medical equipment. A study must be made of the requirements in the way of drugs and dressings and of the amount that probably would be needed. All these things should be done in advance of actual hostilities, and should be adequate to meet all exigencies.

DR. KARL CONNELL: Modern war is not merely the clash of the sword at the battle front, it is an intense economic struggle which involves every phase of natural activity. Those of us who have seen the present European war at close range were profoundly impressed with the complex organization which kept the soldier on the firing line itself. A vital unit of this organization behind the soldier is the sanitary department. I had the opportunity last winter to observe certain phases of the surgical and sanitary organization in France, Germany and Austria-Hungary, and I was deeply impressed with what martial efficiency meant, by the slow preliminary preparation necessary for efficiency, by the intensive organization, the mental and physical preparedness in time of peace which alone makes for success in time of war. As against infection by disease, so against war, preparedness is the one vital lesson they bring home. It becomes a duty to impress on you the medical needs in war and sow the seed that will bring this country to physical, social and military fitness Our own wars have been sanitary disasters Although the medical corps of our regular army is highly efficient, yet it is scarcely half the strength required for our small army on a peace basis Our future depends on the training by a small professional army of the larger army of citizen soldiery, men trained as in Europe, alike a national asset in peace and in war Correlated with this they must become medically efficient by organizing their civilian surgeons The professional military surgeons do not do the surgery of the war They are primarily officers of sanitary administration Their duty is to keep the health of the troops, get supplies and rid the fighting zone of the sick and wounded The actual surgery of war must be done by the civilian surgeons working in the base hospitals From the German West front, men with head wounds are gathered in Cologne under Professor Preysing The mandible cases are concentrated at Dusseldorf under Professor Bruhn In this clinic reconstructive surgery after the terrible face injuries reached its highest development under a surgeon already trained in the accident service of the Essen Iron Works In retrospection of all the marvels of intricate organization, the most impressive feature is the economic result The acute cases are less severe by virtue of prompt treatment The chronic cases do not back up, like logs in a jam, to be cleared out after the war, each case moves smoothly to its final cure with the system and precision of peace It is the economic, humanitarian, impersonal triumph of organization The medical corps of our regular army is numerically entirely inadequate and should be strengthened No efficient organization exists for the civilian surgeon The reserve medical corps is loose, disjointed and uncontrolled

Dr S H Wadhams, Major, Medical Corps, United States Army It is evident that the present medical organization of the army, which is scarcely adequate for times of peace would impose a tremendous burden on the civil profession in the event of war The result of medical unpreparedness has been amply demonstrated in the past, and unless we learn the lessons of former wars, the same inefficient provision for protecting the lives and health of the men from the onslaughts of disease would result in untold suffering, loss of life and increase in the pension roll in the future The medical resources in case of war are about 444 medical officers in the United States Army, about 850 in the National Guard, and about 1,500 in the National Reserve Corps To be thoroughly efficient, the medical man must have special training as a medical officer This being true, it is evident that the act of April 23, 1908, which provided that members of the Medical Reserve Corps should give their services only in times of emergency war, is wofully inadequate As to the number of medical officers that are required, if the army should number 2,000,000, it would have only 20,000 medical officers, or 1 per cent, which is not enough It must be remembered that in time of war there must be medical officers at the front, in the lines of communication to the base hospitals, in the base hospitals and from the base hospital to the home territory For duty at the front a man must be a trained organizer and a sanitarian, none of his duties there require a high order of medical or surgical skill, but do require administrative ability The experience of the Spanish-American War should teach the necessity of medical preparedness, and that we cannot depend on a voluntary service that can be accepted or rejected at will We must be prepared before the emergency arises

Dr William S Terriberry There are three schemes of organization which are now prominently before the public (1) the scheme proposed by the staff of the army, (2) the so-called continental army organization, and (3) the federalization of the organized militia The general staff proposes a greatly increased regular army, a short time of enlistment, and a reserve It provides for a continuation of the soldier's training in a reserve during a period of years and finally enrolment in a reserve without further training This plan perpetuates a system of highly trained, mercenary professional armies, a military organization hopelessly out of date Mobilization of the regular army for war would necessitate an infusion of 60 per cent of green men and probably 40 per cent of untrained officers, and this would mean that the present army could not take the field for at least three months after mobilization The plan for a peace time volunteer army provides for the enrolment of a force of 400,000 men in annual quotas of 133,000 The force is to be raised by authority of Congress and is to be under the direct orders of the president both in peace and in war It is to be trained, armed, equipped and paid by the federal government, and is not to be assembled except for short periods each year The continental army plan leaves all important objects unattainable The national guard system is worth perpetuating and developing on condition that it can be standardized to a common high level, and that it can be made available for use at any time, for any purpose and as long as needed Of all plans for military preparedness, the regulation of the organized militia offers the best prospect of development into a national army of the twentieth century model Whatever the form of organization, it is not too much to say that the success or failure of future war depends on the care that is given to the organization by the medical department The smallest proportion of medical officers that would be needed for service with troops actually in the field is 1 per cent., and these men would have to be medical officers and not civilian doctors improvised into officers To train these men takes years of instruction and practice The best organization seems to be a civilian base hospital unit, complete with consultants, operating surgeons, assistant surgeons, specialists, laboratory men and a nursing force This unit should be organized and its personnel kept up during peace to a full war strength For the members of this unit, military instruction is necessary No adequate method of national defense will arise from the present agitation The nation has never been actually tested in war, and it will take a real war with an overwhelming defeat to convince us that a national army based on universal service in time of peace is our only safety

Dr Edmund P Fowler The regimental officer is responsible for the sanitary condition of the regiment A regular monthly examination is made of every soldier and the records kept The sanitary detachment is responsible for the sanitary operation of the kitchen, the care of urinals, the collection and disposal of waste, and for the public washing and bathing places The regimental sanitary detachment accompanies the troops to the front in time of battle and establishes first aid stations near the firing line The medical officer must be not only a trained doctor but also a trained soldier, and the two ways to train men for this duty are either in the national guard with the troops or with the reserves Conditions abroad have shown the results of medical unpreparedness, and if in the future we are to avoid such results, training in the medical service required to meet the demands of war must be universal

DISCUSSION

Dr Henry C Coe In 1908, when Congress provided for a general medical reserve corps, such a corps was regarded as a joke and remained so for a long time Recently there has been a changed condition of affairs in the corps Five or six years ago I went to Gettysburg with the troops to learn what I could with reference to the possibilities for usefulness of the medical reserve corps I then made up my mind to try to galvanize this dead body into life, and the effort has been attended with great success in this state The medical reserve corps in New York state numbers 230 today We want young active men, men who are patriotic and ready to serve their country The medical man should be under the same necessity of giving his services to the state as of giving his services to humanity

Dr S J Meltzer Our hospitals and universities can be used, such units sent abroad give better service than the foreign countries have been able to provide I cannot agree with the statement regarding the question of preparedness of the Army Medical Corps, it is astonishing what they have accomplished in the last sixteen or eighteen years We learned the cost of not having an efficient medical service in the Spanish-American War and that very able Surgeon-General, Dr George M Sternberg, has laid the foundation for an efficient army medical corps in the Philippines and in Cuba which has accomplished a great deal in many trying circumstances Dr Sternberg has demonstrated that a medical man can be patriotic and will give his utmost service to his country, and this service is at the same time not in contradiction to his service to humanity

Dr Emil Huel When the state accepts the services of a soldier, it gives him a uniform and a certain financial compensation, while the man in the Medical Reserve Corps has to furnish his own equipment, and give a great deal of time to preparation for the service, for which he receives nothing except at such a time as he might be in active service and then he is allowed $5 a day The federal government should recognize the burden that preparation for military service imposes on the civil practitioner and should give him fair treatment

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ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Twenty Sixth Annual Meeting held in Chicago Feb 8 1916

The President, Dr Charles R Bardeen, in the Chair

Resolutions

The association approved of the purposes of the National Board of Medical Examiners, and recommended that its objects be encouraged

The Executive Council recommended that after Jan 1, 1918 the standard for admission to medical colleges be increased from thirty to sixty hours of college credit, with the present specific requirements as a basis This recommendation will be acted on at the next annual meeting as an amendment to the constitution

Function of the Dispensary

Dr. George Blumer, New Haven, Conn The dispensary should be a center for the dissemination among the public of the knowledge of preventive medicine The presence of the medical student stimulates the attending physicians to a better type of work. Adequately equipped dispensaries should be a source of material for research The dispensary offers greater opportunities for the study of minor ailments and incipient chronic disease than does the hospital It is a mistaken assumption that medical fledglings are capable of adequately caring for this important work Trained supervision of the dispensary work is important An insufficient social service department or absence of one is frequently noted The unit arrangement is the best There should be a central waiting room surrounded by suites of examining or dressing rooms Each clinic should control a working unit, and each unit should consist of a central admitting room, which connects directly with the general waiting room, flanked on either side by a series of unit rooms, modified according to the need of the particular clinic In the central admitting room of each unit the current records are kept, and the room is divided into a series of cubicles in which the histories of the patients are taken A superintendent, not necessarily a physician, should be in charge of the dispensary, and he should have training in the social side of dispensary work. He should devote his entire time to the work. There should be a sufficient force of clerks and nurses The dispensary staff may be divided into the teaching staff and the service staff, the latter taking care of the routine work of the dispensary At Yale we find it necessary to have at least one paid man in each department Records should be carefully and properly kept. The dispensary is a natural feeder of the hospital The equipment should be such that thorough examination and treatment of all patients is possible, including apparatus and a clinical laboratory, Roentgen department, physical therapy department, cystoscopic rooms, etc There should be at least one instructor to a group of five students Where the clinical clerk system is in operation, third year students may devote their time in the dispensary to general clinics, and the fourth year students to the specialties Specialization should be encouraged in the separate clinics The third year students should be taught how to take histories and how to handle patients in a tactful and humane manner, how to make a thorough routine physical examination, and do the necessary clinical laboratory work, and should receive instruction in the use of diagnostic apparatus and instruments The class method of instruction is a great advantage A properly equipped and adequately manned dispensary is one of the most important factors in clinical instruction

Aims, Methods and Results in Medical Education

Dr Charles R Bardeen, Madison, Wis The results of the joint product of educational plants, teachers and students are to be determined by the scientific output and by the ability of the graduates to perform the services for which they are trained Methods should be designed to furnish the requisite training as directly, simply and inexpensively as possible compatible with adequate results We need more organization and cooperation of men in different lines of work Hospitals should be looked to more and more as natural centers, where the specialized activities of groups of physicians may be brought into harmonious cooperation A greatly reduced number of physicians can serve the needs of the people effectively only through cooperation There is also a need of a financial reorganization in medical economics The public should pay for the public services which physicians perform the same as lawyers are paid The expense connected with the early years after graduation, as well as the cost in time and money of the long training now demanded of medical students, makes it imperative that we should seek to lessen the cost to the student in every way compatible with efficient training because otherwise we shall encourage him subsequently to become commercialized With the profession confined to a few high priced practitioners there will be danger of increased quackery for the mass of the people If we try to reduce expense by educating large numbers in relatively few medical centers, effective results will not be obtained, because intimate association between teacher and pupil is necessary

Teaching of Applied Therapeutics

Dr. Francis H McCrudden, Boston The teaching of therapeutics is one of the weakest points in the training of the medical student The weakness lies in the fact that no systematic instruction is usually given in the general principles of therapeutics In the course in clinical medicine, the attention of the student is directed chiefly to symptomatology and diagnosis, treatment is relegated to a subordinate position The treatment of sick patients can be learned only by the inductive experimental method of long continued bedside observation of many patients We treat individuals rather than diseases Pharmacology, though generally considered the science at the basis of treatment, is not, for it deals with only part of the fundamentals of therapeutics It deals with the activities not only of useful drugs, but also of drugs which are not useful A knowledge of pathology and clinical medicine is a necessary prerequisite to the study of therapeutics, but is not necessary for the pharmacologist Drugs have a different effect in pathologic conditions from what they have in health A knowledge of pharmacology alone is not a sufficient basis for the treatment of patients Therapeutics should be taught as an applied science, and not as an empiric art It should be the most important course in the curriculum Improvement in functional efficiency is the ultimate purpose of all therapeutics All methods of treatment may be grouped under three headings (1) preventive treatment, (2) direct treatment of the disease or its causes, (3) indirect treatment directed at the functions of various organs Therapeutics is really a branch of applied physiology, and should be taught as such I teach therapeutics in a large, modern hospital, of about 150 beds, well equipped for study, diagnosis and treatment A definite plan of teaching is outlined, considering in order the treatment of various diseases of each organ We begin with diseases of the heart, and then in order consider the kidneys, vessels, lungs, blood, gastro-intestinal tract and diseases of metabolism The functions of each organ are reviewed, and then the nature of the disturbance of function, to which pathologic changes may lead, methods of influencing these disturbances definite subcutaneous hemorrhage following puncture of the skin, an increase of the bleeding time, and the development of a large number of petechial hemorrhages following the application of a tourniquet

4 **Eventration of Diaphragm.**—Bayne-Jones reports a case of eventration of the right side of the diaphragm He claims that this diagnosis, made from physical examination, is the first of its kind determined during the life of the patient The clinical impression was confirmed at an operation Tabulation is made of forty-five cases of eventration of the diaphragm Of these, three were right-sided, while forty-two were left-sided lesions In the differential diagnosis between eventration and allied states, the difficulties are pointed out, particularly with regard to the differentiation from hernia of the diaphragm No single method is capable of establishing this differentiation, but all together render the diagnosis reasonably certain The various etiologic hypotheses are summarized, showing that the weight of evidence is in favor of the opinion that the disease has a congenital origin

5 **Gaucher's Disease in an Infant**—Wahl and Richardson state that in Gaucher's disease the liver and the spleen show not only a marked increase in the lipin content, but also a serious alteration in normal relations of the lipins to each other The fixed fats are greatly reduced, while the lipoids, such as lecithin and cholesterol, are greatly increased In the author's case a lecithin-like body predominated, but a cholesterin compound may prevail in other cases In Gaucher's disease, lipoid substances accumulate in the form of small droplets within the cytoplasm of the tissue cells, resulting in the formation and accumulation of the distinctive large pale cells so characteristic, histologically, of this disease Gaucher's disease is due to a disturbance of lipoid and fat metabolism, resulting in the accumulation of lipoid substances in the cytoplasm of the large pale cells that are mostly transformed reticulo-endothelial cells of the spleen, lymph nodes and bone marrow and the stellate cells of the liver These cells have the physiologic property of disposing of the fats and lipoids, and comprise the "endothelial Stoffwechselapparate" It is thus a system disease, but involves the hematopoietic organs only secondarily in that they are very rich in the reticulo-endothelial cells Those organs that contain the reticulo-endothelial cells in large abundance (spleen, lymph glands, bone marrow, liver, stellate cells of Kupfer, etc) show the most changes, but specific parenchymal cells may absorb some of the lipoid in a very advanced case Gaucher's disease belongs to the group of xanthelasmic conditions which are characterized by a more or less diffuse accumulation of lipoids in reticulo-endothelial or in fibroblastic cells in one or more organs It represents a more diffuse and widespread involvement of the "endothelial Stoffwechselapparate" than those cases of "grosszellige Hyperplasie der Milz" in diabetic lipoidemia, with an underlying cause that is more deepseated and inherent in the body economy

7 **Agglutination in Pertussis**—A strongly agglutinating pertussis serum was best obtained by the authors in the rabbit by ten to twelve intraperitoneal inoculations of living cultures given at seven-day intervals Over 95 per cent of rabbits, inoculated in this manner, produced agglutinins, though not in equal abundance Agglutinins are also produced by vaccines, but not as abundantly as by living cultures Those rabbits which received eight to nine inoculations of vaccine and did not show agglutinins to any large extent, were, nevertheless, markedly immune A high titer serum (from 1 4,000 to 1 10,000) always proved to be a quickly acting serum which reacted in from one to one and one-half hours in the incubator at 37 C, sometimes up to 1 8,000, with well agglutinable pertussis strains A low titer serum was usually slow in reaction and did not show agglutination till after remaining in the ice-box over night By agglutination tests, *B pertussis* strains can be specifically identified from hemoglobinophilic bacilli, pertussis-like bacilli, and *B bronchisepticus* In no instance was there cross agglutination between these organisms—at least not higher than 1 40 For identification a strong serum of high titer should be used Thirty-three per cent of adult nonpertussis serums show agglutination in up to 1 40, 17 per cent in up to 100, 40 per cent of children's nonpertussis serums (scarlet fever cases) showed a reaction in up to 1 40 A dilution of not less than 1 200 is necessary for a practically positive diagnosis of pertussis by agglutination test

9 **Typhoid Treated by Injections of Polyvalent Sensitized Typhoid Vaccine Sediment**—This article deals with the study of 105 cases of suspected typhoid In sixty-five of the 105 cases the diagnosis of typhoid was made from both clinical and laboratory data In these sixty-five cases the Widal was positive in sixty (93.7 per cent) and as early as the fifth day, the high percentage of results being due, in a large measure, to the method employed, namely, the use of the macroscopic method and a formaldehydized culture of the typhoid bacillus Of the blood cultures taken in fifty-eight cases there were forty positive (70 per cent), including a case first seen on the thirty-second day In only one case of the sixty-five were both Widal and blood culture negative, which case was diagnosed by the presence of *B typhosus* in the stools The method of treatment employed by Gay and Chickering consisted in the intravenous injection of 1/60 to 1/25 milligram (150 to 300 million bacteria) of a sensitized, polyvalent, killed typhoid vaccine sediment prepared after the method of Gay and Claypole In 66 per cent of the cases a distinct benefit was obtained, in 41 5 per cent of this 66 per cent the recovery was of an abortive form with a critical fall of temperature and a permanent normal temperature established within a few days This permanent normal temperature was reached on an average seven days after beginning treatment in these cases A series of subcutaneous injections following the intravenous treatment apparently aids in preventing relapses

Boston Medical and Surgical Journal

February 17 CLXXIV, No 7, pp 223 258

11 *Skin Reactions Excited by Various Bacterial Proteids in Certain Vasomotor Disturbances of Upper Air Passages J L Goodale, Boston
12 Gunshot Fracture of Long Bones C C Simmons, Boston.
13 Abnormalities of Heart in Infectious Diseases. C. S Chapin, Great Barrington
14 Heart in Pregnancy E H Taylor, Pittsfield
15 Heart Disease in Pregnancy and Labor J L Huntington, Boston

11 **Vasomotor Disturbances of Upper Air Passages**—During the past two years 340 cases exhibiting vasomotor disturbances of the upper air passages have been examined by Goodale with reference to the possibility of eliciting a skin reaction by the application of various proteins to an abrasion or scratch of the skin The results of these studies have shown that from a clinical standpoint such conditions may be divided into two main groups, the seasonal and the perennial The seasonal group includes hay-fever and hay asthma, in cases in which the exciting protein is represented by the pollen of different species of plants, the occurrence of the symptoms being synchronous with the flowering of the plant in question The perennial forms of vasomotor disturbance occur at any time of the year Goodale calls attention to the probable existence of a third group of vasomotor disturbances, which may be termed infectious, in that their appearance seems to stand in relation to bacterial invasion of the upper air passages In certain anaphylactic individuals exhibiting symptoms of perennial vasomotor disturbances of the upper air passages, an immediate and characteristic reaction is elicited by the application to a scratch of the skin of soluble extracts of *Staphylococcus pyogenes albus, aureus, citreus* and *Micrococcus tetragenus*, also by an as yet unidentified bacillus having some of the characters of Friedländer's bacillus Such individuals are not sensitized equally to these organisms, some patients reacting to one and some to another of the bacteria in question

California State Journal of Medicine, San Francisco

January, XIV, No 1, pp 1-42

16 Laryngeal Diphtheria W W Beblow, Boston
17 Local Anesthetics G MacGowan, Los Angeles
18 Clinical Records E S Kilgore, San Francisco
19 Perinephritic Abscesses W F Braasch, Rochester, Minn
20 Need of Psychopathic Hospitals in Large Cities H W Wright, San Francisco
21 Are We Making Progress in Early Recognition of Tuberculosis? G H Evans, San Francisco

22 Review of Recent Progress in Roentgenology W W Boardman San Francisco
23 Mastoid Operation Dependent on Pathology C F Welty San Francisco
24 Origin and Ending of Dr Jordan Museum of Anatomy etc J F Gibbon San Francisco

Colorado Medicine, Denver

February XIII No 2 pp 35 68

25 Etiology Pathology and Therapy of Hodgkin s Disease and Allied Affections J F Yates Milwaukee Wis
26 Experiences in Serbia W A Jolley, Boulder
27 Case of Pelvic Cellulitis or Phlegmon Ligneux of Pelvis W A Jayne Denver
28 Interparoxysmal Vasomotor Crises of Migraine E W Lazell Denver

Iowa State Medical Society Journal, Des Moines

February II No 2 pp 41 95

29 Roentgen Observations Respecting Cause and Treatment of Constipation F T Case Battle Creek
30 Report of Ruptured Uterus in Country Practice A J Swezey Decorah
31 Diabetes Mellitus S K Davis Libertyville
32 Extrinsic Muscles in Refraction H M Irish Cedar Rapids
33 Induced Abortion C F Dakin Mason City
34 Gangrene of Appendix M Emmert Des Moines

Journal of Biological Chemistry, Baltimore

February XXXII No 2 pp 91 182

35 Mode of Action of Oxidases H H Bunzell Washington D C
36 Relative Oxidase Activity of Different Organs of Same Plant H H Bunzell Washington D C
37 Cephalin Cephalin of Egg Yolk, Kidney and Liver P A Levene and C J West New York
38 Determination of Urea by Urease Method D D Van Slyke and G E Cullen, New York
39 *Studies on Physiology of Reproduction in Domestic Fowl Effect of Feeding Pituitary Substance and Corpus Luteum Substance on Egg Production and Growth R Pearl Chicago
40 Changes in Weight and Composition of Fasting Lobsters S Morgulis New York
41 Lewis and Benedict Method for Estimation of Blood Sugar Obtained in Disease V C Myers and C V Bailey New York
42 Is Autolysis an Autocatalytic Phenomenon? M Morse Omaha
43 Occurrence of p Hydroxyphenylethylamin in Various Mistletoes A C Crawford and W K Watanabe San Francisco

39 **Physiology of Reproduction in Domestic Fowl**—Pearl found that feeding the desiccated substance of the anterior lobe of the pituitary body of cattle to hens in laying condition but at a time of year when the rate of fecundity is declining, does not stimulate the ovary to an increased rate of production Feeding the same substance (pituitary body, anterior lobe) to growing pullets does not bring about any earlier activation of the ovary than occurs in normal control pullets not fed this substance The anterior lobe of the pituitary body from cattle when fed to growing chicks is accompanied by a distinct retardation in growth in body weight This confirms for the chick the results which have been obtained with this substance by other investigators in mammals The feeding of the desiccated substance of corpus luteum brings about a retardation of growth about twice as great in amount as that following pituitary feeding, as above noted Neither pituitary substance (anterior lobe) nor corpus luteum substance when fed to laying pullets causes any retardation in the attainment of sexual maturity as indicated by the laying of eggs The birds so fed begin to lay eggs at the same age, but at a smaller body weight than the normal controls Some of the essential safeguards for the critical conduct of organ substance experiments with poultry are discussed

Journal of Laboratory and Clinical Medicine, St. Louis

February I No 5 pp 283 370

44 *Condition of Vasoconstrictor Center During Development of Shock G Seelig and D R Joseph St Louis
45 *Physiology of Parathyroid Glands W F Koch Detroit
46 *Further Studies in Nicotin Tolerance C W Edmunds and M I Smith Ann Arbor Mich
47 *Hexamethylenamin as Urate Solvent and Diuretic and Its Effect on Reaction of Urine P J Hanzlik Cleveland
48 *Gonococcus Complement Fixation New Lipoid Antigen C C Warden Ann Arbor Mich and L E Schmidt Chicago
49 Fetal Erythroblastosis Fetal Erythroblastomatosis P G Woolley Cincinnati
50 New Operating Table and Head Holder for Experimental Purposes D E Jackson, St. Louis.

44 **Vasoconstrictor Center During Development of Shock**—The problem which Seelig and Joseph worked on was essentially this Can one obtain any conclusive evidence that during the development of shock, the vasoconstrictor center at any time loses its activity? They attacked the problem on this basis If the vasoconstrictor nerves to one ear are cut all influence of the vasoconstrictor center over the vessels of that ear is removed The denervated vessels might then be expected to react more or less passively to changes of pressure within them If the heart were maintaining a high blood pressure these vessels should become passively dilated If on the other hand the blood pressure were low they should be correspondingly less dilated In other words the control vessels of the denervated ear should react passively no matter what the pressure within them The vessels of one ear were denervated by resecting and severing under ether anesthesia the auricularis magnus nerve at the base of the pinna and removing the superior cervical sympathetic ganglion on the same side In no case was the animal reduced to a state of shock immediately following the denervation of the ear Twenty-five experiments were performed The interval between denervation of the blood vessels of one ear and the production of shock varied from twenty hours to twelve days

The results of these experiments is summarized as follows Denervated blood vessels usually show the best passive response to internal pressure changes when used within twenty four hours after their denervation Normally innervated ear vessels are strongly constricted while the animal is sinking into a condition of shock and after shock has developed This strong vascular constriction persists even though the blood pressure be raised well toward the normal level (at a time when the animal shows distinct symptoms of shock) This vasoconstriction is due to the activity of the vasoconstrictor center because (*a*) the control denervated vessels become strongly dilated under the influence of the same pressure and (*b*) the constriction of the normal vessels themselves disappears at once if their connection with the vasoconstrictor center is destroyed by cutting the nerves, or by abolishing their conductivity with ether or by freezing Since a fairly high degree of activity of the vasoconstrictor center can be demonstrated even after the blood pressure has fallen to a low level and reflexes are sluggish, the authors believe it is justifiable to conclude that a paralysis or failure of the vasomotor center is not the primary cause of the other symptoms of surgical shock

45 **Physiology of Parathyroid Glands**—The urines were collected separately from forty-seven parathyroidectomized dogs Especially designed cages were used to avoid fecal contamination The urines were filtered and evaporated to a syrup by an electric fan at a temperature not above 20 C The residues were dissolved in alcohol, filtered and evaporated, and this process repeated until the last evaporate dissolved readily in alcohol The lipoids present were extracted with ether and the residue taken up in water This solution was cautiously precipitated with picrolonic acid Several insoluble picrolonates were thus obtained, and by recrystallization from water and alcohol were purified These substances Koch tested for physiologic activity Two of them were found to modify the blood pressure when injected intravenously into anesthetized dogs When injected intraperitoneally into nonanesthetized animals they exhibit very marked toxic effects They were therefore selected for analysis One substance was found to reduce gold chlorid quite rapidly, and picrolonic acid slowly Koch therefore tested for an aldehyd group With ammoniacal silver nitrate no mirror was obtained but instead a yellow gray precipitate whose solubility resembles that of silver cyanid The substance itself freed from picrolonic acid is practically neutral in reaction, very soluble in water and alcohol, somewhat soluble in ether It gives a picrolonate in the form of very fine microscopic needles which melt at 118 C, solidifying rapidly to an orange colored mass which melts with decomposition at about 230 C, 0.249 gm is soluble in 100 c c. of hot water The substance agrees in percentage composition with the picrolonate of methylcyanamid The other substance

isolated from the urines and having a physiologic action is basic in reaction It is less soluble in water than the first substance Its picrolonate crystallizes from water forming small orange colored mounds The picrolonate melts at 232 C with decomposition The substance agrees in composition with the picrolonate of trimethylmelamin which is the polymer of methylcyanamid Because of the agreement in chemical and physiologic properties the substances may be considered identified as methylcyanamid and trimethylmelamin

The methylcyanamid isolated from the urines and the synthetic methylcyanamid were injected intraperitoneally in nonanesthetized dogs and found to have similar effects In small doses they produce extreme vasodilatation observed in the reddening of the sclera and swelling and reddening of the tongue Larger doses cause paralysis and convulsions Still larger doses cause an extremely rapid death Intraperitoneal injection of 27 mg of the synthetic substance into a rabbit of 1 5 kg body weight produced after sixteen minutes very marked vasodilatation observable in the air vessels, and labored breathing accompanied by wheezing suggestive of bronchial stricture In this condition the animal rapidly developed tremors and tetany with the head thrown back and hind limbs extended After a few minutes the tetany gave way to coma resulting in death An injection of 22 mg of natural substance in a rabbit of 1.25 kg produced death very similarly, although the tetany was not marked and the dyspnea and coma symptoms predominated On the other hand 4 mg injected intraperitoneally into a white rat of about a 100 gm weight caused death practically instantaneously with opisthotonos developing no coma whatever The similarity in the behavior of the parathyroidectomized dogs, to that of the nonanesthetized animals treated with the substance isolated from the urine, is further indication that this substance is responsible for the symptom complex of parathyroid insufficiency The data therefore justifies the following conclusions 1 Somewhere in the body methylcyanamid is generated 2 This substance has a physiologic value in normal animals 3 After parathyroid extirpation the substance accumulates in toxic quantities, and is responsible for the death of these animals

46 **Studies in Nicotin Tolerance** — The conclusions Edmunds and Smith draw from their work are that the livers of all dogs possess some power to destroy nicotin and that the destroying agent is probably a ferment It is possible that this ferment may be increased in quantity by the constant use of the alkaloid, but their experiments do not furnish any support for this theory The main difficulty appears to be that under normal conditions the destroying powers of different livers vary so much in strength that it is almost impossible to state that it has been increased by treatment

47 **Hexamethylenamin as Urate Solvent and Diuretic** — Hanzlik emphasizes the fact that hexamethylenamin per se in small quantities, or therapeutic doses, imparts to urine no demonstrable urate solvent qualities Slight and practically negligible uric acid solvent effects are imparted to urine by excessive doses of hexamethylenamin, and in this the effects of the common alkaline diuretics are pharmacologically and economically superior There is no evidence that hexamethylenamin can dissolve urate calculi Regarding the efficiency of the class of drugs called "urate solvents," Hanzlik says that the statement of Fränkel (1906) is quite to the point and appropriate, namely, that no substance has yet been discovered which would form either soluble or easily oxidizable compounds with uric acid under conditions of the body

48 **Gonococcus Complement Fixation** — This article presents in detail the conclusions summarized in the preliminary report made before the Section on Genito-Urinary Diseases at the San Francisco meeting of the American Medical Association, detailing the work done with the fats of the gonococcus as antigen in gonococcus complement fixation tests, the superiority of an alcoholic solution of these fats over watery extracts being shown

Journal-Lancet, Minneapolis

February 15, XXXVI, No 4, pp 93 126

51 Laminectomy Under Local, Not Spinal Anesthesia A C Strachauer, Minneapolis
52 Local Anesthesia L E Daugherty, St. Paul
53 Organization and Cooperation J Grassick, Grand Forks, N D
54 Infections of Mouth G B New, Rochester, Minn
55 *Anaerobic Bacteria and Their Relation to Surgery* G H Twining, Mobridge, S D

Journal of Nervous and Mental Disease, Lancaster, Pa.

February, XLIII, No 2, pp 105 200

56 *Localization of Function in Canine Cerebellum E G Grey, Boston
57 *Value and Meaning of Adductor Responses of Leg A Myerson, Boston
58 *Speech Conflict*, Natural Consequence in Cosmopolitan Cities as an Etiologic Factor in Stuttering, Report Based on Two Hundred Cases M K. Scripture and O Glogau New York.

56 **Localization of Function in Canine Cerebellum** — The results of Grey's experiments tend to support the hypothesis that the question of a localization of function in the cerebellar cortex is still in dispute Previous investigations have shown that the gradual amelioration of symptoms, which follows removal of the cerebellum, does not occur in animals in which the sensorimotor spheres of the cerebrum have also been destroyed When the sensorimotor areas are destroyed some weeks subsequent to a primary ablation of the crus secundum (lobulus ansiformis) or the lobulus simplex of the cerebellum, the symptomatic evidences of the latter injury, which have subsided, reappear once more and persist over a long period The results of Grey's experiments accordingly indicate the considerable value of this combination of lesions in the study of canine cerebellar localization

57 **Value of Adductor Responses of Leg** — The opinion is advanced tentatively by Myerson that the adductor responses belong to the tonic responses of muscles habitually maintained in tonus by some influence other than the cerebrum, that in health this tonus being less important for the preservation of attitude than the tonus of the extensor group of muscles, is not to any great extent demonstrable as the adductor response, but that in disease of various kinds, but having as their general feature either the functional or the organic injury to the cerebrum, these responses become manifest in the manner described The adductor responses are present in health as mild and occasional homolateral and contralateral responses from sites described above Fatigue does not increase them but diminishes them to the point of abolition The appearance of contralateral adductor responses especially from the patellar tendon, the external condyle, the anterior superior spine, and to a lesser degree from the Achilles tendon, is a phenomenon of disease, not necessarily organic, but usually such

Medical Record, New York

February 12 LXXXIX, No 7, pp 265 310

59 Rocky Mountain Spotted (Tick) Fever H C Michie, Jr, and H H Parsons, Glendive, Mont
60 Craving for Supernatural T A Williams, Washington, D C
61 Sunlight Necessity for Maintenance of Health J W Kime, Fort Dodge, Iowa
62 Retroversion and Retroflexion A Jacoby, New York
63 Improved Flexible Esophageal Bougie R C Kemp, New York.
64 Experimental Study of Effect of Emetinized Blood on Typhoid Bacillus M Beekman, Natchez, Miss

February 19, No 8 pp 311 352

65 Newer Practical Points in Treatment of Typhoid B Robinson, New York
66 Constitutional Inferiority H M Friedman, New York
67 Physician, Know Thyself A. MacFarlane, Albany
68 Reminiscences of Chlorin D H Stewart, New York.
69 Vaccine Therapy G A Ehret, Cleveland
70 Fatal Case of Cedar Oil Poisoning W D McNally, Chicago

Michigan State Medical Society Journal, Grand Rapids

February, XV No 2 pp 57 104

71 Local Anesthesia in Abdominal Surgery J H Jacobson, Toledo
72 Cancer of Uterus W P Manton, Detroit
73 *Conservative Surgery of Ovary* J H Carstens, Detroit
74 *Report of Committee on Bacterin and Serum *Therapy in Diseases* of Eye Ear, Nose and Throat W Haughey Battle Creek

75 Heart Diseases in Children W J Wilson, Jr Detroit
76 Dark Field Illumination Method in Diagnosis of Primary Syphilis R G Owen H Snure and W C Pitts Detroit
77 Five Recent Cases of Primary Carcinoma of Vulva F M Loomis Ann Arbor
78 Paralysis of Serratus Magnus Muscle Following Removal of Glands of Neck C D Camp Ann Arbor
79 Multiple Syphilitic Ulcers of Lower Legs and Feet F I Senear Ann Arbor

74 Abstracted in The Journal, Sept 25 1915 p 1137
75 Abstracted in The Journal Sept 18, 1915 p 1055

Modern Hospital, St Louis

February VI No 2 pp 77 152

80 New Mount Sinai Hospital of Cleveland W S Post New York and S S Goldwater Cleveland
81 Some of Hospital Standards of Tropical America B W Caldwell Santo Tomas Panama
82 Actual Values in Nauheim Bath System C G Anthony Saratoga Springs N Y
83 Some Administrative Problems in Hospital Buying C S Loder New York
84 New Isolation Unit Hurley Hospital Flint Michigan H F Davis New York and A M Schill Flint Mich
85 Management of Food Supply of Hospital E P Joslin Boston
86 Nuts and Nut Preparations in Dietary J P Street New Haven Conn
87 Admitting Department of Large Hospital D Toll New York
88 Unit Dressing Package C E Black Jacksonville Ill
89 Boiler Room Economics. T Howell and J Murray New York

New Jersey Medical Society Journal, Orange

February XIII No 2 pp 53 104

90 Prolapsus Uteri A A Strasser Arlington
91 Significance of Urinary Findings F Klein Bayonne
92 The Specialist Problem F J Marsh Paterson
93 Value of Hospitals to Cities J C McCoy Paterson
94 Standardized Hospital and Its Obligations G K Dickinson Jersey City
95 Diet in Hyperchlorhydria F F Lupin, Bayonne
96 Syphilitic Aortitis J Roemer Paterson

New York Medical Journal

February 12 CIII No 7 pp 289 336

97 Chaulmoogra Oil in Treatment of Leprosy V G Heiser New York
98 *Treatment of Grippe B Robinson New York.
99 So-Called Grippe J B Rucker Jr Philadelphia
100 Common Abdominal Crises M R Bookman New York
101 With American Red Cross in Vienna P A Smithe Enid Okla
102 Diagnosis of Brain Tumor H Climenko New York
103 Tremor Tracings. H Crenshaw Atlanta Ga
104 Fracture of Skull F R Barnes and M A Slocum Philadelphia

97 **Leprosy Treated with Chaulmoogra Oil**—The mixture used by Heiser is prepared as follows ℞ Chaulmoogra oil, 60 c c., camphorated oil, 60 c c , resorcin, 4 gm Mix and dissolve with the aid of heat on a water bath and then filter In one case cited Heiser began treatment by injecting into the buttocks 2 c.c of the chaulmoogra oil mixture every eight days The dose was gradually increased until on April 19, 1912 the patient was given 5 c c every three days Feb 21, 1913, the dose was gradually reduced to 2 c c October 13, the dose was gradually increased to 10 c c., and since Feb 14, 1914, he receives 5 c.c and 10 c c on alternate weeks A portion of the dose is frequently injected into the infiltrated lesions

98 **Treatment of "Grippe"**—Robinson claims to have had excellent results from the following ℞ Ammonii salicylatis, grs iij, caffeinae, gr ¼ M Fiat capsula No 1 M Sig Two of these capsules should be taken by an adult, every two hours, for four or five doses, and then every three or four hours

If the capsules cause slight nausea, which is rare, this may be neutralized by drinking a little vichy with each dose Night and morning, a little carbolated petrolatum, 1 5 per cent, may be inserted into the nostrils A mouth wash and gargle of liquor alkalinus antisepticus, well diluted with water, may be used with advantage, three or four times in twenty-four hours If there are severe pains or fever, one half-grain of phenacetin should be added to each capsule and the effects watched by a physician When the capsules are taken without phenacetin, the patient does not require careful watching

Ohio State Medical Journal, Columbus

January XII No 1 pp 1 80

105 Care of New Born H J Morgan, Toledo
106 Recognition and Management of Threatening Diabetic Coma L A Levison Toledo
107 Profession and Cancer Problem J S Rardin, Portsmouth
108 Relation of Industry to Medicine E R Hayhurst Columbus
109 Physicians' Index C O Beardsley Ottawa
110 Present Day Facts in Ophthalmology of Essential Importance to General Practitioner R Sattler, Cincinnati
111 Progress in Therapeutics for 1915 J W Sheetz Columbus
112 Modification of Reeder Dutrow Tonsil Knife H V Dutrow, Dayton

Public Health Journal, Toronto

February VII No 2 pp 59 114

113 Work of Bureaus of Child Hygiene and Medical Inspection in Schools P H Bryce Ottawa
114 Few Hints to Medical Profession in Relation to Public Health Work G E DeWitt Wolfville N S
115 Community Hygiene J K Macleod Sydney, N S
116 Menace of Inherited Defects G B I Arner
117 Life of Young Nation J Grant Ottawa
118 Eradication of Tubercular Cattle from Milch Herds A W Tracy Sherbrooke Que
119 Antityphoid Inoculation C W Bliss, Amherst N S

Texas State Journal of Medicine, Fort Worth

January XI No 9 pp 461 514

120 Negro as Health Factor O Dowling Shreveport La
121 United States Government Meat Inspection and How it Might be Supplemented by State and Municipal Inspection A O Lundell Fort Worth
122 Preventive Medicine A C DeLong San Angelo
123 Need of Conservation of Vital Assets J D Covert, Fort Worth
124 Vital Statistics. W A Davis Austin
125 Disinfection A I Lincecum Austin
126 Health Conservation After Forty J L Davis Waco
127 Facts Bearing on Cause of Pellagra C C Parrish Fort Worth
128 Heisrath Kuhnt Operations W R Thompson Fort Worth

FOREIGN

Titles marked with an asterisk ( ) are abstracted below Single case reports and trials of new drugs are usually omitted

Brain, London

November 1915 XXXVIII Part 3 pp 191 389

1 Postural Activity of Muscle and Nerve C S Sherrington
2 Muscle Tonus J W Langelaan
3 Unmyelinated Nerve Fibers as Conductors of Protopathic Sensation S W Ranson

British Journal of Children's Diseases, London

January XIII No 145 pp 1 32

4 Cure of Squint N B Harman
5 Eleven Cases of Cerebrospinal Fever E C Williams.
6 Cure of Suppurative Meningococcal Iridochoroiditis by Injections of Antimeningococcal Serum into Vitreous A Netter

British Medical Journal, London

January 29 I No 2874 pp 153 188

7 *Treatment of Gunshot Wounds of Knee Joint A L Lockwood
8 Epidemic Cerebrospinal Fever E C Hort
9 Studies in Antiseptics Chloramine H D Dakin, J B Cohen and J Kenyon
10 Gassing Accidents from Fumes of Explosives L G Irvine
11 Cases of Phlebotomus Fever at an Island in Eastern Mediterranean J T D S Higgins
12 Temperature Necessary for Destruction of Lice and Their Eggs A W Bacot

7 **Treatment of Gunshot Wounds of Knee Joint**—The points on which Lockwood lays most stress are That all foreign bodies whether metal or loose bone, should be removed from the knee joint at the earliest possible moment Perfect immobilization is absolutely necessary Do not start passive movements too early , wait at least three weeks after the inflammation has subsided Absolutely complete excision of all necrotic or even edematous tissue should be made The capsule should be closed at the first operation if at all possible Antiseptics, other than 1 per cent saline or glycerin and formaldehyd mixture, should not be introduced into a joint Tubes should never traverse the joint surface as in Barnard's method Patients should not be moved till one is satisfied that infection has been successfully combated Among sixty patients so treated there was one death In this patient both the femur and tibia were badly comminuted and the joint was purulent on admission The patient was a

cachectic, cadaverous looking man, with no resistance, and died in spite of early amputation There were three amputations In two patients there was bad comminution of both tibia and femur, with the joint full of pus, and the general condition of the patient was not good on admission In one patient the amputation was done at once, in the other after five days in the hospital In the third patient a hand grenade had absolutely shattered the joint and filled it with pieces of metal and dirt , Gas gangrene was present, and the leg was amputated at once The results as to movement were as follows ankylosis, 3, limited movement, 4, free movement, 49 Fracture of one or both bones existed in 53 per cent, bloody effusion in 96 per cent, and pus perceptible to the naked eye in 56 per cent of cases The bacteriologic reports on 42 cases showed that organisms were present in 76 per cent

Lancet, London

January 29 I No 4822 pp 227 280

13 *Gunshot Wounds of Chest J R Bradford
14 *Surgical Treatment of Gunshot Wounds of Chest H M Davies
15 Rationale of Chemotherapy in Syphilis J E R McDonagh
16 *Simpson Light in Treatment of Venereal Lesions E G Ffrench
17 Influence of Febrile Conditions on Inoculation Agglutinins. H L Tidy
18 *Fatal Case of Anthrax, Infection of Shaving Brush E H Snell and E W G Masterman
19 Detachment of Retina C Higgens
20 Thrombosis of Cerebral Arteries in Paratyphoid B W MacAdam -

13 **Gunshot Wounds of Chest**—Approximately 25 per cent of the cases of hemothorax referred to by Bradford were infected, and in 20 per cent of the infected cases the infection was derived from the lung, that is, the fluid contained lung organisms, in the remaining 80 per cent the infection was derived from the exterior—skin soiled clothes etc In many of the infected cases, Bradford says the clinical picture at first closely resembles that of a sterile hemothorax, and it is only by exploratory puncture, or even repeated exploratory puncture, that the diagnosis can be made Usually the pyrexia, dyspnea, frequency of the pulse, and icterus are more marked, and the patient is obviously often very ill but it is extremely important to recognize the fact that not uncommonly at first he is not apparently very ill, and then suddenly most alarming symptoms develop, and unless promptly treated death ensues Sometimes these urgent symptoms are suggestive of secondary hemorrhage, namely, a rapid pulse, cold clammy skin and urgent dyspnea It was only as a result of some postmortem examinations made in such cases in the early months of the war that it was ascertained that these symptoms were due not to hemorrhage as was thought, but to infection with anaerobic gas producing organisms Such cases may recover in an extraordinary way if they are recognized and the pleura promptly opened and drained, a local not a general anesthetic being used

In another group of cases associated with anaerobic infection characteristic signs develop, suggesting the occurrence of pneumothorax Thus the heart undergoes rapid outward displacement and a "cracked pot" percussion note is obtained which twenty-four hours previously was absent The frequency of this "cracked pot" percussion note is remarkable, and Bradford thinks sometimes it might be regarded as almost pathognomonic of these cases These cases are also liable to be erroneously diagnosed as merely cases of simple pneumothorax, as a bell sound is well marked The patients in the cases associated with streptococci are usually very ill, with much fever, very rapid pulse, furred tongue, and diarrhea of the severe type is also often present Contralateral pleurisy is much more common in these cases than in the simple sterile cases, and pericarditis and pneumonia also occur as complications The mortality in the septic cases was much reduced by early recognition of the existence of the infection and prompt drainage by resection of a portion of a rib as soon as the bacteriologic evidence proved the presence of infection

14 **Surgical Treatment of Gunshot Wounds of Chest**—Davies emphasizes the necessity of having a manometer connected with the pleural cavity and of registering constantly the variations in intrapleural pressure, and of having means of controlling the same during operative interference on the closed chest If such measures are adopted, and if the track of needles inserted into the chest is always anesthetized, there is a minimum of discomfort and a complete absence of danger to the patient Davies has had, on the one hand, patients in bed with a localized positive pressure equal to 30 mm of mercury, and up and about with a generalized unilateral pressure equal to 12 mm of mercury At the other end of the scale he has had patients tolerating without discomfort a negative pressure equal to 60 mm of mercury during quiet respiration, and working with a negative pressure equal to 50 mm of mercury

16 **Simpson Light in Treatment of Venereal Lesions**—From an extended experience of this treatment for venereal lesions Ffrench has come to the conclusion that the best results are obtained by giving a treatment three times a week (every other day) with an exposure of two minutes' duration and varying the treatment with the open and focal rays from time to time according to the condition of the lesion

18 **Fatal Case of Anthrax**—Smears of the blood from around the pustule showed many anthrax bacilli, some of which were abnormally swollen Cultures from this blood on a sloped agar tube yielded colonies of *Staphylococcus albus* and *Bacillus anthracis* From these latter subcultures have been made After death the spleen was removed and smears of the spleen pulp showed abundant *Bacillus anthracis* The shaving brush of the deceased was found to contain anthrax spores Four of the other brushes were examined, with negative results The source of infection was therefore not clear, as the shaving brush used conceivably might have been infected from the skin Two of seven other brushes secured from the same stock as the patients contained virulent anthrax spores

Practitioner, London

February XCVI, No 2 pp 131 230

21 Treatment of Urgent Pleurisy S West
22 *Citrated Whole Milk Method in Feeding of Infants E Pritchard.
23 *Use of Undiluted Citrated Milk in Feeding of Infants R. Carter
24 Recent Obstetric and Gynecologic Cases at London Hospital. R. D Maxwell
25 Skin Grafting in Mastoid Operations H J Marriage.
26 Surgical Efficiency—Plea for Better Facilities and Training J H Watson
27 Recent Work in Radium Radiology and Electrotherapeutics N S Finzi
28 Recent Work on Diseases of Nervous System H C Thomson
29 Some Prescriptions and Their Use A Graham Stewart
30 Hysterical Anesthesia in Egyptians A E A Ismael
31 Case of Dislocation of Spleen with Torsion of Its Pedicle H Angus

22 **Citrated Whole Milk Method in Feeding Infants**—Pritchard pronounces the citrated whole milk method as being physiologically unsound, because it allows no latitude for adaptation to the individual's digestive, assimilative, metabolic and secretory activities, and claims that its use imposes obligatory modification of the infant It affords little scope for the study of the influence of variations in the diet If the principles of percentage feeding are understood, a satisfactory food can be synthesized in a great variety of ways to satisfy the physiologic requirements of any particular child, and dried milk, if properly modified and of good quality, has all the advantages, and few of the disadvantages, of so-called dairy milk

23 **Undiluted Citrated Milk in Feeding of Infants**—Carter gives undiluted sterilized milk one tenth of the body weight, he insists on clock like regularity of feeding, and makes the intervals between the feeds as long as possible, so that the stomach is empty before the next meal Contrary to the generally accepted method of giving 2 grains of citrate of soda to each ounce of milk, he gives only 1 grain Receive the milk in a clean jug, and then place the jug in a saucepan of water, and allow the water to boil for five minutes Each meal is prepared separately Carter has always had good results with undiluted citrated milk using it as a routine method, but much better results are obtained by abandoning all routine methods and concentrating more on the individual requirements of each case.

Archives des Maladies du Cœur, etc, Paris

December 1915 VIII No 12 pp 433 527

32 Muscle Fibers in Heart Valves (Note sur quelques points nouveaux de la structure des valvules du cœur) A F S Kent (Bristol)
33 *Blood Obtained by Puncture of Vein Best for Serodiagnosis (Comment recueillir le sang pour eviter les erreurs dans le sero-diagnostic) M Parvu
34 Intoxication from Asphyxiating Gases (Sur les troubles cardio vasculaires et l etat du sang dans les intoxications par les gaz asphyxiants des allemands) J Heitz

33 Improved Technic for Preliminaries to Serodiagnosis—Parvu presents arguments to show that it is far from being immaterial whether the blood for the Wassermann or similar tests is drawn from the finger or the ear, or by puncture of a vein, or whether the serous fluid in a blister is taken His extensive research has shown that the antibody content is always highest in the blood obtained by puncture of a vein Hence this should be used in testing for antibodies positive results may be obtained here when the blood from the ear or finger is constantly negative Error from this was noted in 40 per cent of twenty cases examined for the purpose There is also danger of contamination with the other technics, which is avoided with the vein puncture while the serum obtained in this way contains the maximum of antibodies alexins and hemolysins He emphasizes further that the blood must be allowed to clot naturally, the ten or twelve hours which this requires allow time for the leukocytes to yield up to the serum all their lysins and antibodies The blood should never be centrifugated or defibrinated for serodiagnosis, otherwise the leukocytes keep alive and retain the antibodies This is easily demonstrated by testing the serum for antibodies alexins and lysins at different stages of the coagulation process He usually waits till next day before decanting the serum

Archives Mens d'Obstet et de Gynécologie, Paris

November 1915 IV No 11 pp 401 432

35 The Role of Glycogen in the Normal Uterine Mucosa L. F Driessen (Amsterdam)

Bulletin de l'Academie de Médecine, Paris

January 11 LXXV No 2 pp 21-48

36 Diagnosis of Pericarditis with Much Effusion in Chronic Nephritis. (Le frottement pericardique dorsal dans les pericardites brightiques a grand epanchement) Chauffard
37 *Measures to Transform Infected into Sterile Wounds and Close as Soon as This is Realized (Fermeture secondaire des plaies de guerre) A Carrel Dehelly and Dumas
38 Reflex Paralysis and Relaxation with Mechanical and Electric Overexcitability of Muscles (Paralysie et hypotonie reflexes avec surexcitabilite mécanique voltaique et faradique des muscles) Babinski and J Froment

January 18 No 3 pp 49 90

39 Pyoculture Not a Reliable Guide to the Prognosis (De la pyoculture Etude critique d'aprés l analyse de 29 cas) S Pozzi
40 Excitability of and Conductibility in Wounded Nerves. G Battez and R Desplats
41 Colon Bacilli Contamination of Beer in Flanders (Recherches bacteriologiques sur les bieres des Flandres II) L. Roussel and others
42 *Epileptic Seizures from Cicatricial Irritation of Peripheral Nerves (Syndrome epileptique par irritation nerveuse peripherique ou épilepsie de Brown Sequard) A Mairet and H Pieron

37 Sterilization of Wounds and Immediate Closing—Carrel and his co-workers report experiences in which infected wounds once thoroughly sterilized, healed by primary intention when closed at once This prompt coaptating of the muscle fibers leads to healing with only a thin layer of cicatricial tissue, thus preventing the usual mass of cicatricial tissue which is such a hindrance to functioning They sterilize the wound with their special 1 200 hypochlorite solution (See The Journal, February 5, p 447), keeping the wound constantly irrigated with it, day and night When the phenomena indicating infection have subsided and smears show reducing numbers of microbes in the secretions of the wound and finally their complete disappearance, the wound is closed This is usually possible from the fourth to the tenth day As the infection has been conquered, conditions are practically the same as in a fresh operative wound, and the tissues heal by primary intention when carefully coaptated Strips of adhesive plaster, from 2 5 to 5 cm wide, are applied perpendicularly to the wound to bring the tissues together, or clips can be used, no suturing is done unless circumstances compel it This early closing of wounds gets the patients up much earlier and this in turn aids in warding off stiff joints and atrophy

42 Brown-Séquard's Epilepsy—Mairet and Pieron state that they never encountered but one case of this kind in forty years of practice before the war, and have since seen but one case In the latter two nerves of the brachial plexus were irritated by cicatricial processes, and the irritation spread to the spinal cord and hence to the brain, bringing on convulsions and finally a typical and severe epileptic seizure Both cases presented visual hallucinations, in the later case there was evidently a predisposition on the part of the nervous system The tendency to convulsions was arrested early by measures to relieve the irritation of the peripheral nerves One was by keeping the entire arm repeatedly in hot water for three hours at a time after excision of the scar tissue The tendency was thus broken up before the epilepsy had become chronic

Journal de Médecine de Bordeaux

January LXXXVII No 3 pp 39 60

43 Protection Against Asphyxiating Gases (La lutte prophylactique contre les gaz asphyxiants) Richard
44 *Internal Iodin Treatment in the Major Infections (La therapeutique iodee systematique dans les grandes infections.) L. Boudreau
45 Ethyl Chlorid General Anesthesia and Military Surgery (L'anesthesie generale au chlorure d ethyle et la chirurgie de guerre) J Carles and A Charrier
46 Crutches and Artificial Legs (Bequilles et appareils de prothese) Rouquette

44 Iodin in Treatment of Major Infections—Boudreau advocates systematic and intensive use of iodin as the most easily managed of internal disinfectants, the least harmful with the maximum of action, and the one to be preferred to all others unless there are formal contraindications It seems to modify the "organic habits" while rousing and exalting the natural activities which have been slumbering or sluggish or perverted Wherever there is infection he regards it as indicated—the fact that iodin is found naturally in the body gives confidence in the use of it Iodin does not accumulate in the body but is rapidly eliminated, and hence the doses must be fractioned as much as possible and adequate amounts be given Years of experience with it, he relates have confirmed beyond question that it is microbicide and antitoxic, and has an intense stimulating action on production of leukocytes and on the functioning of the glands, especially of the ductless glands, besides a general tonic action on the vital functions In septicemia of any kind it tends to break up "the bowel-blood vicious circle" and, given in time, especially in typhoid, seems to ward off the development of this vicious circle He reiterates that iodin has no preference among bacilli, he gives it wherever fever develops, without waiting to differentiate its special cause He discusses in particular typhoid, puerperal fever, epidemic meningitis, measles, scarlet fever, and whooping cough, saying that the intensive iodin treatment not only aids in throwing off the infection and reducing the contagiousness of the disease, but it seems to ward off complications It does not conflict with but supplements vaccine and antitoxin treatment He insists on the necessity for giving the iodin by the rapid-firing, small dose method, *doses mitraillees,* keeping them up day and night in acute infections, imitating thus Nature's methods In whooping cough he gives 7 year old children an average of 60 drops of the official tincture of iodin of the French Codex, distributed throughout the twenty-four hours [This tincture differs from the U S P tincture, the French Pharmacopeia directs simply the solution of iodin in 90 per cent alcohol 1 part of iodin for every 12 parts of alcohol—Ed] He states that children of 3 can take 40 or 50 drops without apparent harm The results are excellent, shortening the course of the disease and warding off complications, especially when supplemented by local sterilization of the throat rubbing the chest with balsam oil, and giving hot iodized baths

His main contention, however, is that iodin should be given in tuberculosis and pushed to the extreme limits of tolerance For some time he has been proclaiming that iodin must be regarded as the direct and heroic treatment for tuberculosis, and his continued experience has apparently confirmed this He reiterates, however, again and again, that it is absolutely indispensable to begin with minute doses and work up very slowly and gradually to the large dosage Boudreau's article was in press at the time the war broke out, and he adds to it that the war experiences of the last sixteen months with infectious diseases and infected wounds have merely reenforced all his statements

Paris Médical

January 22 VI No 4 pp 97 112

47 *Rats in the Trenches (La destruction des rats dans les tranchées) A Loir and Legangneux
48 *Importance of Alcoholism as Factor in Typhoid Mortality* (L'alcoolisme et la mortalite dans la fievre typhoide) M Labbe
49 Protheses Restoring Function in Paralyzed Muscles (Methode de prothese fonctionnelle) Pierre Robin
50 Simulation in the Army V Audibert
51 Management of Comminuted Fractures (Esquillectomies larges et pseudarthroses) E Meriel

47 **Squill as Rat Poison**—Loir and Legangneux mention that one rat catcher in the trenches of the Aisne and the Marne killed 5,457 rats in 105 days At Havre, squill has been found quite effectual as a rat poison It is mixed with equal parts of chopped meat, to form balls of about 5 gm each It attracts the rats still better when one drop of anise is added to a paste made with 5 gm squill, 20 gm flour, 20 gm powdered fennel and grease enough to mix into a hard paste, cut up into tablets of about 10 gm each A few scraps of calcium carbid in the rat hole, the outlets closed with dirt, will generate acetylene gas enough to kill rats, if water is poured on it

Presse Médicale, Paris

January 17, XXIV, No 3, pp 17 24

52 Critical Study of Artificial Legs (Etude critique des appareils de prothese français pour amputations de jambes) Ducroquet
53 Charts Showing Decline of Typhoid Fever Since Vaccination (Vaccination et paratyphoides) M Labbe

January 20, No 4, pp 25 32

54 *Complications of Paratyphoid (Sur les complications des paratyphoides) J Minet
55 *Determination of the Functional Capacity of the Heart (Epreuve fonctionnelle circulatoire Appreciation de la puissance de reserve du cœur) A Martinet

54 **Complications of Paratyphoid**—Minet relates that he had always supposed that paratyphoid fever was a mild affection, over in two weeks, but since he has been in charge of a typhoid hospital near the front he has learned that its localizations and complications are liable to be the same as with typhoid, although less frequent In 60 paratyphoid cases there was intestinal hemorrhage in 3 The hemorrhages kept up for several days and in one case returned two weeks later, but the men recovered Another paratyphoid B patient developed acute angiocholecystitis, with liver colic, in the course of which the pulse became thready and the heart beat 160 The man died suddenly when apparently on the road to recovery In 2 cases there was paratyphoid phlebitis, with recovery, and physical signs of myocarditis were manifest in 19 Heart tonics were given regularly to all, epinephrin was a valuable aid in some cases, *caffein gave no relief* Minet never fails to examine the heart regularly, every day, in every paratyphoid case All his other patients recovered In 7 of his 60 cases there were pleuropulmonary complications like those encountered in typhoid In one case paratyphoid bacilli were found numerous in the sputum, some preexisting lesion having afforded a nest for the bacilli, entailing a chronic process In time the preexisting infectious germs got the upper hand and crowded out the paratyphoid bacilli

55 **To Determine the Reserve Force of the Heart**—Martinet emphasizes that the heart and vessels form a single mechanical system so that any reaction at any point in the system is felt at various other points By testing the changes induced passively by change of position and actively by exercises, we get a good insight into the functional capacity, the ability to maintain the normal balance between the parts He gives here the charts from a few out of fifty persons tested by a standard technic The pulse is counted until two successive minutes are the same beat, first as the patient lies flat, then as he stands erect The minimum and maximum tension are taken at the same time By waiting until the beat is regular through two periods, emotional fluctuation is excluded This he calls the static test Then the exercise or dynamic test is made by deep bending of the knees, done twenty times at the rate of sixty or seventy times a minute The pulse and the tensions are then recorded each minute for from three to five minutes The patient then reclines anew and the pulse and pressure are recorded again A chart showing the records presents at a glance the conditions in the cardiovascular apparatus as the variations from the normal range are so striking These tests reveal latent weakness of the heart by *bringing on a transient phase of asystole* They will also aid in distinguishing between organic and purely functional weakness The static test shows up particularly any tendency to vasomotor weakness the tachycardia is exaggerated while the sphygmomanometer reaction is weak or negative The exercise test reveals any tendency to weakness on the part of the heart, by the same exaggeration of the tachycardia *with slight or no sphygmomanometer reaction* and further by the delay before the previous balance in the circulation is restored These reactions are in fact those of induced hyposystole

Berliner klinische Wochenschrift

November 8, 1915, LII, No 45 pp 1153 1176

56 *Treatment of Simple Pruritus (Entstehung und Beseitigung des Juckens 4 Der einfache Pruritus) P G Unna
57 Neurology in War (Ergebnisse der kriegsneurologischen Forschung) H Oppenheim
58 Internal Medicine in War (Aufgaben und Probleme der inneren Medizin im Kriege) Goldscheider Commenced in No 44
59 *Cancer of the Gallbladder Usually Symptomless or Masked (Die Schwierigkeiten der Erkennung des Gallenblasenkrebses am Anfang und Ende dieser Krankheit) H Kehr
60 *Vascular Disease and Syphilis (Zur Kenntnis der Gefasserkrankungen infolge von Lues) C Friedländer

November 15, No 46 pp 1177 1200

61 Simple Pruritus P G Unna See abstract 56
62 *Albumin Poor Diet in Nephritis (Zur Behandlung der Nierenkranken) F Hirschfeld
63 Constantly Negative Wassermann Reaction in Twelve Cases of Pemphigus (Ueber das angebliche Vorkommen einer positiven Wassermann'schen Reaktion beim Pemphigus) E Nathan
64 Agglutination in Dysentery (Die Agglutination bei Ruhr und ruhrartigen Erkrankungen) L Dünner
65 Later Course of Gunshot and Shell Wounds of the Skull. (Zur Klinik der Schadelschusse nach den Erfahrungen im Heimatlazarett) E Hayward Concluded in No 47

56 **Simple Pruritus**—*By this term Unna means* itching not restricted to any one locality, but either universal or shifting about under the influence of chronic intoxication or senility The intoxication may be from quinin or arsenic, tobacco or intestinal helminths, chronic jaundice, diabetes, albuminuria or senility The factor common to all these, he explains, is toxic injury of the nerves of the vascular capillaries from some toxin with reducing properties This injury fluctuates with the intensity of the toxic action, and hence the itching increases and subsides with it All disappears without leaving a trace as the underlying constitutional affection or intoxication is cured Copious drinking helps to wash out the toxins Venesection followed by injection of Ringer's *fluid would have to be repeated* often to be effectual, and is thus not practicable A course of mineral waters is useful and he recommends as the simplest form of this a mixture of 40 parts sodium chlorid, 1 part calcium chlorid, 8 parts potassium chlorid and 8 parts sodium percarbonate Of this oxidizing mixture 4 or 5 gm are dissolved in 2 liters of water and the whole sipped in the course of twenty-four hours For local application he commends oxidizing baths or an oxidizing salve to rub into the skin The rapid benefit from this oxidizing treatment of pruritus, with or without jaundice, confirms that the elements in the blood which are responsible for the itching are of reducing nature For immediate relief he knows of nothing to compare in effectiveness with monochlorbenzol (chlorbenzene) which penetrates the skin at once without damaging it and relieves the itching

for several hours or the whole night The surface can be washed off or sprayed with the solution of 1 2 or 5 parts of chlorbenzene in alcohol to 100 parts (See previous abstracts of Unna's study of pruritus, The Journal, January 15 p 227, and February 19 p 609)

59 **Cancer of the Gallbladder**—Kehr states that a permanent cure has been realized in only one of his forty nine operative cases of primary cancer of the gallbladder In this single case the gallbladder had been removed for chronic inflammation and the microscopic discovery of the cancer was a surprise It had given no signs of its presence In a total compilation of 350 operations for cancer of the gallbladder a permanent cure is known in only 2 3 per cent This bad record is because it is impossible to diagnose cancer of the gallbladder in an early stage and because chronic inflammation of the gallbladder is not given operative treatment early enough The only prophylaxis available at present is to remove the gallbladder when chronic cholecystitis proves rebellious to a course of proper internal treatment He warns that the combination of a hard knobby tumor in the gallbladder with ascites, cachexia and jaundice even without any history of colic may be the manifestations merely of a simple gallstone trouble If it is assumed to be cancer and operative treatment is advised against as hopeless, the patient may die from the entirely benign affection Only when there are several knobby tumors, intense jaundice and extreme ascites with enlargement and cirrhosis of the liver can we be practically certain of malignant disease The pain is no criterion In fact, he declares no progress has been made in recent years in the positive diagnosis of malignant disease of the gallbladder, especially in its early or its latest stages

60 **Connection of Syphilis with Vascular Disease**—Friedländer reviews the literature on this subject, remarking that the tendency now is to exaggerate the share of syphilis in the production of aneurysm of the aorta and other vascular affections He admits that the artificial production of aneurysm by injection of spirochetes, as reported by Vanzetti is demonstrative evidence, but, on the other hand Friedländer and von Zeissl never found any special tendency to aneurysms among the thousands and thousands of syphilitics applying to the dermatologic clinic and the Jubilee Hospital at Vienna

62 **Treatment of Kidney Disease**—Hirschfeld relates a number of case histories to demonstrate the advantages in chronic kidney disease of restricting the intake of albumin When the daily total is kept down to 40 gm albumin with only 30 gm of absorbable albumin and about 5 gm sodium chlorid far-reaching improvement follows especially with contracted kidney The diet should consist of vegetables potatoes rice green vegetables, cream, sugar and large amounts of fruit in every form The output of urine becomes reduced to three quarters of a liter in the twenty-four hours, and it is generally alkaline or neutral or weakly acid, in the latter event it can be made alkaline by giving 1 or 2 gm sodium bicarbonate or sodium citrate daily When the urine becomes alkaline, the albumin disappears from it more or less completely On this albumin-poor diet the urine contains about 5 gm nitrogen, 5 or 6 gm salt and a total of about 25 gm solids, in contrast to the 60 or 70 gm on an ordinary diet The specific gravity ranges between 1 011 and 1 014 The blood pressure generally begins to go down in about two weeks After several weeks of this diet, if a meal with much albumin is given there is usually considerable polyuria a few hours later Muscular exercise retards this polyuria It also retards elimination of nitrogen For this reason it is better to permit food more liberal in nitrogen only when complete repose can follow

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 22 XLVI No 4 pp 97 128

66 Criminal Responsibility and Hysterical Irresponsibility (Verantwortlichkeit und hysterischer Dammerzustand) C Strasser

Deutsche medizinische Wochenschrift, Berlin

November 18 1915 XLI No 47 pp 1385 1416

67 *Is it Really Entirely Impossible to Make Prostitution Harmless from the Standpoint of Health? (Ist es wirklich ganz unmoglich die Prostitution gesundheitlich unschadlich zu machen?) A Neisser
68 Prophylaxis of Camp Typhoid by Disinfection of the Hands (Typhusbekampfung im Felde durch ein einfaches Verfahren zur Handedesinfektion) K W Joetten
69 Bile Agar for Cultivation of Typhoid Bacilli (Die Typhusbazillenzuchtung mittels der Galleschragagarrohrchen) H Koenigsfeld
70 Gastro Intestinal Affections in Soldiers (Zur militararztlichen Beurteilung und Behandlung der Magen Darmkrankheiten im Krieg) F Roemheld
71 Standard Tests for Estimation of Functional Capacity of the Heart (Zur Funktionprufung des Kreislaufs speziell bei Erschopfungs und Fieberzustanden) J Schutz
72 Necrosis of the Gallbladder after Typhoid (Nekrotisierende Cholecystitis typhosa) O Orth
73 Explosive Action of Bullets in Organs Containing Fluids (Hydrodynamische Wirkung der Infanteriegeschosse) M Reuter
74 Transportable Bathing Establishment (Badegelegenheit im Felde) Buschan
75 Sanatoriums for the Young (Ueber Jugend und Schulsanatorien) Sexauer

January 13, XLII No 2 pp 33-60

76 Duodenal Ulcer I Boas Concluded in No 3
77 *Action of Blood Charcoal on Digestion (Ueber die Einwirkung von Blutkohle auf die Magenverdauung) H Strauss
78 Wounds of the Chest and Lungs (100 Brust und Lungenschusse) Lonhard
79 Injuries of the Hearing Apparatus in War and Their Treatment (Gehorverletzungen im Stellungskriege und ihre Behandlung beim Truppenteil) A Peyser
80 Gas Gangrene (Ergebnisse der bisherigen kriegschirurgischen Erfahrungen III) H Matti
81 *Two Weeks Quarantine for Cholera (Unzulanglichkeit der Beobachtungsdauer bei Cholera) J von Daranyi
82 Psychoses Connected with Abnormal Internal Secretion (Ueber dysglandulare Psychosen) A Fauser
83 Christian Science (Christliche Wissenschaft) F Kohler

67 **Is Sanitation of Prostitution Impossible?**—Neisser says that sanitation of prostitution has never been really attempted It is a medical not a police question Clandestine prostitution is particularly dangerous on numerous accounts This he thinks, should be combated by providing opportunities for free examination and treatment of venereal disease There should be social service work, enlightening and educating the girls and women striving to turn them aside from illicit intercourse and aiding them in self-support He regards it as an essential feature of these dispensaries that they should not insist on a course of hospital treatment The results would be better of course, in the individual case, but the dread of being sent to the hospital would deter others from coming to the dispensary More welfare work and social service more preventive control with specialist medical treatment will certainly reduce the number of female sources of infection and secondarily of the male sources

The treatment of each venereal affection is discussed in detail Soft ulcer he wipes off with pure phenol and then applies a cotton pad greased with petrolatum containing 10 per cent of some silver salt Iodoform is more effectual, but its odor precludes its use The phenol application should be renewed daily as long as necessary, and the necessity for keeping the entrance to the vagina thoroughly coated with petrolatum should be impressed on the patient This not only tends to protect the male but it protects the female against another crop of soft ulcers Copious greasing of the entrance to the vagina and to the urethra also affords some protection against gonorrhea In any event, a well greased cotton pad should be placed over the mouth of the uterus to protect it against gonorrhea and also to protect the male against gonorrheal uterine processes already installed For local treatment he uses urethral bougies containing 10 or 20 per cent of some silver salt, with 30 parts starch, 4 parts tragacanth and 20 parts acacia One of these medicinal bougies is introduced every day, or two in a day, and a cotton pad applied to hold in the melting mass This reduces the contagiousness materially, and in time will realize a cure, while a course of hospital treatment is thus avoided

Prophylaxis of syphilis is still simpler, merely thorough greasing of the mouth of the vagina and the vicinity with petrolatum Neisser regards the mechanical as the principal protecting factor, but it might be better to incorporate some disinfectant with the greasing material, such as calomel, as in Metchnikoff's 33 per cent calomel salve Prophylactic salvarsan treatment he urges not only for those with known syphilis but as a prophylactic for all prostitutes

77 **Action of Animal Charcoal on Gastric Digestion**—Strauss has become convinced of the advantages of kaolin and animal charcoal in treatment of infectious intestinal troubles, especially dysentery He prefers the charcoal, pulverized as fine as soot, and has given it for weeks at a time to patients without impairing their appetite except in the rarest cases Various writers have asserted that kaolin and charcoal interfere with digestion by adsorbing the digestive ferments, but Strauss presents evidence to prove that although this adsorption proceeds regularly in the test tube, the living digestive apparatus tends to keep the digestive ferments at a certain level More is secreted to take the place approximately of what has been adsorbed In gastric and duodenal ulcer it has the additional advantage of settling as a protecting coating over the ulceration It proved useful also in dysentery given in enemas He tabulates the findings in thirteen persons and calls attention to the way in which charcoal adsorbs all occult blood in the gastro-intestinal tract

81 **Cholera Quarantine Requires Two Weeks**—Daranyi tells of epidemics of cholera started by healthy carriers who had been quarantined for the regulation five days There is no knowledge to date of any instance in which the vibriones were found in carriers for more than two weeks Up to the end of two weeks they are dangerous

82 **Serologic Diagnosis in Psychology**—Fauser's article is the concluding portion of an address on the protective ferments from the standpoint of psychiatry, delivered in April, 1914 He emphasizes that the importance of serologic findings is not belittled by the fact that they conflict with many prevailing clinical conceptions They may permit finer differentiation of psychoses, the exotoxic, the endotoxic—the dysglandular, from the gross type of dementia praecox to the finer curable types, "degeneracy psychoses," "hysteria," "epileptoid conditions," etc He enumerates a number of questions pressing for solution, declaring that we have made a beginning in the pathologic serology of the psychoses Certain facts are already established We know that the functioning of the brain cortex can be affected by the functioning of a gland with an internal secretion, this is proved by the benefit on the nervous and psychic manifestations of exophthalmic goiter after operations on the thyroid Also by the favorable influence of operations on other forms of psychoses of thyroid origin Other proof is afforded by the instances of exophthalmic goiter developing after a fright or other psychic trauma He cites as a beautiful example of still another possibility, namely, the influencing of the functioning of a gland with an internal secretion, the observation of an American physiologist that cats subjected to prolonged annoyance showed an increased epinephrin content in their blood

Jahrbuch für Kinderheilkunde, Berlin

January LXXXIII, No 1, pp 1 96

84 *Alimentary Increase in the Sugar Content of the Blood in Infants (Die alimentäre Glykämie des Sauglings) A Niemann
85 Congenital High Scapula (Fall von angeborenem Hochstand des Schulterblattes) W Hoffmann
86 Uretha Stone in Boy of 14 (Interessanter Fall von Harnrohrenstein bei einem 14 jährigen Knaben) J V Bokay
87 *Treatment of Rachitis (Zur Therapie der Rachitis VIII) E Schloss.

84 **Alimentary Glykemia in Infants**—Niemann has been applying to large groups of infants Bang's micromethod for testing the sugar content of the blood He first determined the average content before the first feeding of the day and tabulates the findings at various periods after intake of carbohydrates A large proportion of the infants invariably responded with alimentary glykemia, but the intensity varied within a wide range The highest sugar content was found always in infants thriving well on large amounts of carbohydrate This is the same group of infants that have retention of urine after intake of even small amounts of sugar The sugar in them passes rapidly into the circulation and modifies the intermediate metabolism These children seem to thrive on carbohydrates and do not require fats Another group of infants show very slight alimentary glykemia when fed carbohydrates, and these children do not thrive on carbohydrates They require fats, human milk may be indispensable for some of those in this group Which of the two groups represents the normal one, he does not pretend to say, but expatiates on the importance of distinguishing these groups for proper feeding This is possible now by the degree of the alimentary glykemia and the response in the output of urine after ingestion of a given amount of sugar But it is often possible to ascertain merely from the kind of food the child has been getting whether it does best on carbohydrates or on fats, pallor, soap stools, etc, indicate the response to fat (Niemann's previous communication on this subject was reviewed in these columns Aug 21, 1915, p 747)

87 **Treatment of Rachitis**—This eighth instalment of Schloss' long study of this subject consists mostly of tables giving the detailed metabolic findings of eighty rachitic children taking cod liver oil, calcium, or phosphorus, alone or in various combinations, during periods of natural or artificial feeding (His last instalment was summarized in The Journal, Feb 20, 1915, p 703)

Medizinische Klinik, Berlin

January 9, XII, No 2, pp 31 58

88 *Chemical and Biologic Factors Liable to Induce Lead Poisoning from a Bullet in the Tissues (Die Gefahr der Vergiftung durch ganze oder zersplitterte, im Körper lagernde Geschosse) L Lewin
89 Paravertebral Nerve Blocking for Remote Localized Anesthesia (Ergebnisse bei weiteren 600 paravertebralen Anasthesien) P W Siegel
90 Paratyphoid (Paratyphöse Erkrankungen) L v Korczynski.
91 Wounds of Joints (Felderfahrungen bei 80 Gelenkschussen) Kaehler
92 Improvised Arrangement of Dump Car for Carrying Wounded (Improvisierter Verwundetentransport auf Feldbahnen) A Partos

88 **Danger of Poisoning from a Bullet in the Tissues**—Lewin has long preached that scraps of lead in the tissues are liable to prove a source of constant generation of poison He here offers evidence that lead may become transformed into lead hydroxid under the influence of moisture and the oxygen in the tissues, while the salt content of the tissue juices may also attack the lead A bullet encapsulated in the lung was found incrusted with lead chlorid and this, we know, is soluble in 105 parts water at a temperature of 16.5 C (62 F) Fats, lipoids and pus also act on lead The oil in sardine cans may take up lead from the solder and prove toxic in time On account of this dissolving action of fats on lead, he warns against milk for persons exposed to lead poisoning All the above chemical and still other factors act on a bullet in the tissues in time The mills of the human body grind slowly The action is greater the more surface presented by the lead, a whole bullet is less dangerous than when broken up into fragments When lead is found in the urine of a person known to be harboring a piece of lead, this is a sign that the lead is being disintegrated and that lead poisoning is imminent or installed He regards this as so serious that he would impose special rates for life insurance when there is a projectile in the tissues, even when it is giving no signs of its presence, and above all when lead is found in the urine, saliva or stools Those not familiar with the manifestations of lead poisoning are liable to overlook or misinterpret them, especially the "lead breath," gouty-rheumatic or asthmatic disturbances, or parotitis, herpes zoster, nephritis, chronic constipation, liver derangement, ulceration in the duodenum, or certain heart disturbances exactly such as are encountered in persons free from lead poisoning The eye, ear and other senses may show the effects of the lead poisoning, or there may be a neurasthenic condition which it is certainly not easy to trace to a piece of lead long ensconced in the tissues In short, the symptoms from lead poisoning masquerade and deceive the profession, and this is why the danger from a bullet left in the tissues is not realized by physicians A case of severe lead poisoning was reported in France in 1911 from a birdshot wound of the chest, which had suppurated Denig and Neu published a report in 1915 of ninety-six wounded who had had a projectile in the tissues for from two weeks to several months In 11.5 per cent lead was found in the urine and saliva

Monatsschrift für Geburtshülfe und Gynakologie, Berlin

January XLIII No 1 pp 1-94

93 Lack of Uniformity in Textbook Obstetric Measurements and Planes (Unstimmigkeiten in geburtshulflichen Becken-Massen und Ebenen) L Fuhrmann
94 *Large Nonmalignant Vesicular Mole. (Ueber destruierende Blasenmole) J A Amann
95 *Cultivation of Anaerobes in Febrile Puerperal Cases (Zur Technik und Bewertung der Anaerobenzuchtung) W Lindemann
96 Disturbance in Reflex Control of Puerperal Bladder (Aetiologie der puerperalen Ischurie) P Esch
97 Improved Technic for Forceps Extraction (Ueber die Anlegung der Zange am nicht rotierten Kopf mit Beschreibung eines neuen Zangenmodelles und einer neuen Anlegungsmethode) C Kielland (Christiania)

94 **Cystic Mole**—In the case related the otherwise healthy woman of 49 had four children and had passed through an abortion five months before For the last year she had complained of sacral pains and pain in the right side There had been recent hemorrhage from the uterus for four days followed by a watery discharge and a tumor could be palpated suggesting a soft myoma or sarcoma in the right side of the cervix It proved to be a vesicular mole, the cystic villi had grown into the connective tissue in and around the uterine cervix, reaching to the wall of the pelvis but not invading the actual wall of the uterus which with the endometrium was intact The uterus was removed but it was impossible to get out all the convolutions of the mole Complete recovery followed, with no signs of recurrence during the ten or eleven months since

95 **Bacteriemia in Puerperal Febrile States**—Lindemann reports that he found bacteriemia in 72 per cent of twenty-nine cases of febrile abortion and in 50 per cent of twenty-three women with slight fever after delivery at term This high percentage of positive findings was due to the use of bacteriologic methods to reveal both aerobic and anaerobic bacteria Study of the latter has broadened materially our knowledge of the bacteria that may be present after induced abortions, miscarriages and after deliveries Anaerobic bacteria in the uterus might induce a misleading positive response to the lung-floating test Experiences with criminal abortion testify that extremely virulent anaerobic germs introduced from without may entail the severest infections

97 **Forceps Extraction.**—Kielland gives an illustrated description of his method of introducing the forceps, saying that it ensures a symmetrical, firm grip whatever the position of the head It requires an exact knowledge beforehand of the position of the head the direction of the sagittal suture and the location of the anterior and posterior fontanels Also a slight modification of the forceps pattern These are the only drawbacks, as the mechanical part he reiterates is much simpler and easier than with the ordinary technic. Only two fingers are used in introducing the blade, and this only to the lip of the os uteri, which reduces the danger of infection The grip of the forceps is firm and does not change, and traction is exerted on the axis of the handle while the blades press evenly on the skull their entire length, and less force is required for extraction

Münchener medizinische Wochenschrift, Munich

January 11 LXIII No 2 pp 37-72

98 *Fate and Action of Hot and Cold Beverages in the Stomach (Schicksal und Wirkung heisser und kalter Getranke im Magen) E Egan
99 Roentgen Localization of Foreign Bodies in the Tissues H Schmerz.
100 Practical Means to Help Crippled Soldiers to Help Themselves (Praktische Kriegsinvalidenfursorge) Scholl Concluded in No 3
101 *Benefit from Diathermia in Whooping Cough (Eine neuartige Behandlung des Keuchhustens) E Ebstein
102 Transient Disturbances in Senses of Smell and Taste after Neosalvarsan (Perverse Geruchs- und Geschmacksempfindungen nach Neosalvarsaninjektionen) M Kraupa Runk
103 *Connection Between the Pituitary Body and Diabetes Insipidus (Ueber die Beziehung des Diabetes insipidus zur Hypophyse und seine Behandlung mit Hypophysenextrakt.) G Hoppe Seyler
104 Antityphoid Vaccination and Enlargement of the Spleen Persisting Possibly to the Tenth Week (Typhusschutzimpfung und Milzschwellung) H Kammerer and R W Woltering
105 *Ligation of Femoral Vein in Sepsis after Wound of the Leg (Ueber Venenunterbindung wegen Pyamie nach Extremitatenverletzungen) F Rost.
106 Later Care of Infected Fractures of Upper Arm and Thigh (Zur Versorgung schwer infizierter Schussfrakturen der Diaphysen des Oberarms und Oberschenkels im Heimatlazarett) F Menne
107 Plastic Operations on the Skull (Zur Technik der Schadelplastik) A Hofmann
108 Abortive Treatment of Syphilis (Ueber Abortivkuren der Syphilis mit Salvarsan und Neosalvarsan) F Freund
109 *Silver Nitrate Enemas for Diarrhea of all Kinds (Ein wirksames Verfahren gegen Durchfalle aller Art verdachtige und unverdachtige) T C Rakus
110 Kaolin Crowds Out the Pyocyaneus (Bolus gegen Pyozyaneus) Holzapfel
111 Support for Peroneus Paralysis (Einfache Stutzen fur Peroneuslahmung) Nieny
112 Bacteriology of Dysentery in the War (Zur Bakteriologie der Ruhr im Kriege) F Seligmann
113 Paper Finger Cots (Ersatz fur Gummifingerlinge) H Hech
114 Constricting Band Brings Out Eruption in Early Stage of Typhus (Die kunstliche Stauung als diagnostisches und differentialdiagnostisches Hilfsmittel beim Fleckfieber) C Dietsch
115 Advantages of Sugar for Dressing Wounds (Bemerkungen zur Wundbehandlung mit Zucker) E Meyer

98 **Motor Response of Stomach to Cold and Warm Drinks**—This communication from the official Roentgen laboratory at Vienna in charge of Holzknecht, reports extensive research in this line The findings in fifteen cases are tabulated and demonstrate that the individual stomach may respond in the same way to intake of fluid regardless of its temperature passing it along at once or not, according to its usual behavior whether the fluid is very hot or very cold or tepid In one healthy person and in three with various gastro-intestinal disturbances, cold water set up very lively peristalsis while hot water did not This response was constant in each case but no reason for this different behavior of the stomach could be discovered

101 **Physical Measures in Treatment of Whooping Cough**—Ebstein remarks that too little attention has been paid to the simple maneuver for controlling the paroxysm in whooping cough to which O Naegeli called attention twenty years ago It relieves the disease of its most dreaded features and the mother or nurse or the child himself can apply it Unfortunately however, it requires vigorous inhalation to open the vocal cords, and hence the measure cannot be applied to quite young children In such cases Ebstein has found that diathermia of the larynx, applied from each side, has a remarkable attenuating effect on the whooping cough, transforming it into merely an ordinary cough He says that the effect is amazing in whooping cough at any age The night rest is no longer disturbed Ordinary electricity is not enough, it must be the electric waves of the diathermia technic applied for five or ten minutes, once or twice, to each side of the neck with a current of 0.25 to 0 6 ampere The diathermia technic causes no sensation except that of warmth so that children do not object to it He has applied it successfully to two children of 4½ and 11, the latter not taking any medicine

103 **Pituitary Treatment in Diabetes Insipidus**—Hoppe-Seyler supplements his article summarized in abstract 77 on page 314 January 22 and gives a review of some additional literature It includes Kleeblatt's case in which diabetes insipidus developed after an accident injuring the skull Under pituitary extract, the polyuria subsided, but the thirst and excessive sweating persisted The hypophysis was found intact, the trouble being from chronic irritation of the floor of the fourth ventricle This case corroborates that when hypophysis extract modifies the whole clinical picture, as in Hoppe-Seyler's case, this can be accepted in differential diagnosis of a pituitary affection

105 **Ligation of Vein in Pyemia Consecutive to Wounds of the Extremities**—Rost threw a ligature around the femoral vein in two cases of severe and menacing septic conditions with repeated chills or embolic processes In both cases the effect was excellent, no further chills followed and the temperature gradually subsided In both cases the sepsis had followed amputation, and both men evidently owed their lives to the ligation of the vein above

108 **Abortive Treatment of Syphilis**—Freund gives the details of forty-six cases of syphilis given salvarsan or neosalvarsan to abort it in its incipiency Thirty of the men have been under observation for a year or more and eleven for from six months to a year When the Wassermann was

negative at the beginning of treatment, complete success was constant, but with strongly positive Wassermann the outcome was less reliable, and three of the men had neurorecurrences and two others developed symptoms several months later

109 **Treatment of Diarrhea**—Rakus reports excellent results in treatment of diarrhea of all kinds from rectal injection of 25 gm of 2 per cent solution of silver nitrate in half a liter of tepid water, the patient in the knee-elbow position The enema is retained as long as possible, squeezing the parts to hold it in No water is permitted during the entire course—merely a swallow of hot Russian tea every half hour the first day The second day a little thin soup is permitted, and the third day thin or thick soup The fourth day a little zwieback is added, and by the fifth day the ordinary diet can be resumed One or two enemas often answered the purpose, in others eight or more were required One of his patients was a girl of 13 with typhoid She received the same treatment as the others, and had no fever after the second week He gives two of these enemas a day in the severer and febrile cases

Therapeutische Monatshefte, Berlin

December, 1915, XXIX, No 12, pp 645-692

116 Present Status of Intraspinal Salvarsan Treatment of Syphilitic Disease of the Central Nervous System (Die endolumbale Salvarsantherapie bei syphilitischen Erkrankungen des Zentralnervensystems.) O Naegeli (Bern)

117 Combined Pyramidon and Baths in Treatment of Typhoid (Kombinierte Pyramidon Bädertherapie bei Unterleibstyphus) C Wortmann, A Hackradt and M Quirin

118 Complete Cure in Two Cases of Gangrene of the Lung under Systematic Abstention from Fluids (Zur Therapie des Lungenbrandes durch Trockendiat—Durstkur) Halbey

Gazzetta degli Ospedali e delle Cliniche, Milan

January 16 XXXVII, No 5 pp 65 80

119 *Aphonia with Mitral Stenosis (L'afonia nei vizi mitralici) L R Lanza

120 Improved Technic for Determination of Cholera Germs in Stools (Sopra un nuovo metodo di ricerca e di isolamento del vibrione colerigeno nelle feci) A Marassini

January 20 No 6 pp 81 96

121 Bridge Plaster Casts (Le indicazioni degli apparecchi gessati dis-, continui, a ponte od anse.) F Lastaria

119 **Aphonia with Valvular Defect**—Lanza reports three cases of aphonia with mitral stenosis In one the heart was much enlarged and the left recurrent nerve was compressed, entailing almost complete paralysis of the muscles Under treatment to restore compensation to the heart, the voice improved and kept good for six months Then with failing compensation total aphonia returned The man of 32 died suddenly not long after In a second case there was paresis limited to abduction of the left vocal cord As the heart action improved under treatment the voice returned but was still hoarse In a third case the aphonia was due to an edematous condition of the vocal cords in a case of mitral stenosis with partial adhesive pericarditis The voice came and went at times, in this case, as the cords increased or diminished in size

Pediatria, Naples

January, XXIV No 1 pp 1 64

122 *Tartar Emetic in Treatment of Leishmaniosis in Children (La cura specifica della leishmaniosi nei bambini) R Jemma

123 Vaccine Therapy of Typhoid (Osservazioni cliniche sull influenza curativa di un nuovo vaccino antitifoso) G di Cristina

122 **Leishmaniosis in Children**—Jemma reiterates that we now have in tartar emetic a specific for leishmaniosis in children, so that the problem of treating this terrible disease is completely solved The results in his thirty-one cases, he says, were marvelous (A number of articles on tartar emetic in treatment of leishmaniosis are listed in the Index to the last two volumes of The Journal, nearly all summarized in the abstract department)

Il Policlinico, Rome

January 16, XXIII, No [illegible] pp 69 100, Baccelli Memorial Number

124 Sodium Citrate in Treatment of Pellagra (Risultati di alcune esperienze curative della pellagra col citrato trisodico) G Alessandrini and A Scala

125 Strained Heart (Esistono lesioni di miocardite acuta nella stanchezza di cuore?) G Galli

Semana Medica, Buenos Aires

December 2 1915 XXII No 48 pp 659 686

126 Vaccine Therapy with Heterovaccines (Bacterioterapia y Heterobacterioterapia) S Mazza

127 *Viability of the Prematurely Born (Viabilidad del debil congenito) F A Deluca

128 Some Argentine Mosquitoes (Contribucion al estudio de los anofelinas argentinos) A Neiva

December 16 No 50, pp 715 742

129 Diagnosis of Twin Pregnancy (La intensidad de un unico foco de auscultacion fetal puede ser signo patognomonico de ciertos embarazos supuestos o no gemelares?) E A Boero

December 23, No 51, pp 743 770

130 *Intravenous Injections of Sodium Salicylate in Acute Articular Rheumatism (Las inyecciones endovenosas de salicilato de sodio en el reumatismo articular agudo) P V Cernadas

December 30, No 52, pp 771 800

131 Management of a Case of Diphtheria (Tratamiento de la difteria) R Cabrera

132 Tests of Kidney Functioning (Examen funcional del riñon. Metodos principales y de aplicacion practica) A Viton. Commenced in No 50

133 *Statistical Study of Induced Pneumothorax in Treatment of Pulmonary Tuberculosis C Ferreira.

127 **Viability of the Prematurely Born.**—Deluca gives an illustration of a child born three months before term, weighing only 1,000 gm, while the placenta weighed 360 gm The child was wrapped in cotton and placed in bed with its mother, and was thriving well at the fifth week, the date of writing He tabulates the details of seventy-five other prematurely born infants from the hospital records Only eleven survived, including some born at the sixth or seventh month The smallest of the children that survived weighed 1,200 gm

130 **Intravenous Salicylic Medication**—Cernadas reports the case of a man of 25 with extremely severe febrile rheumatism involving all the joints, with myocarditis and dyspnea, the stomach absolutely intolerant, especially for the salicylates He then made an intravenous injection of 6 c c of a mixture of 5 gm sodium salicylate and 0.25 gm caffein in 25 gm distilled water The injection was repeated daily for six days, increasing the amount from 1.2 to 2 gm By the fourth day the man was able to sit up, with normal temperature, pulse 84, and no further precordial distress

133 **Induced Pneumothorax**—Ferreira is president of the Liga Paulista contra la Tuberculosis and chief of an antituberculosis dispensary He reviews here the statistics in regard to therapeutic pneumothorax published by Saugman (113 cases followed to date of writing), Molon (45), Leysin clinic (23), Carpi (36), Pisani (104), Cionini (53) and a number of others His conclusions from this review are to the effect that even perfected technic has not entirely suppressed all danger from the procedure Gaseous embolism is the principal danger, this is caused by alveolar air being drawn into a vein in the lung which has been injured by the needle introduced or by the tuberculous process itself Transient benefit is relatively common, the immediate benefit is frequently due to suggestion alone The proportion of cases showing radical improvement is unquestionably limited, and a clinical cure should not be spoken of until an interval of one or two years has elapsed He joins with Carpi, Moreli and Maragliano in protesting against the abuse of this therapeutic measure, urging that greater heed should be paid to the limitations set by Forlanini himself

Hospitalstidende, Copenhagen

January 19 LIX, No 3, pp 45-68

134 Vaccine Therapy of Typhoid, Nineteen Cases (Forsøg med Vaccinebehandling ved Tyfus) C N Würtzen

January 26 No 4 pp 69 92

135 Dentistry Methods Applied in Treatment of Fracture of the Jaw (Tandlægebehandlingen ved Skudfrakturer af Kæberne.) O Bjerrum

136 Anemia with Chronic Polyarthritis H Jansen

Ugeskrift for Læger, Copenhagen

January 13 LXXVIII No 2, pp 33 64

137 Paratyphoid, Two Cases, Traced to Veal (To Tilfælde af Paratyfus, formentlig Kalvekødforgiftning) S Hornemann

138 Unusual Longevity of Inhabitants of Danish District (De Gamles Land) R Oppermann

139 Treatment of Chronic Tuberculous at Copenhagen (Om Behandling af Patienter med kronisk Lungstuberkulose i København) K Lundh

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PRINCIPLES UNDERLYING THE CLASSIFICATION OF DISEASES OF THE NERVOUS SYSTEM

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Classifications have value as offering a sort of condensed resume of existing attitudes of mind with reference to the nature and relations of the things classified, and also serve as a concrete setting forth of concepts, which, but for the effort, would tend to linger indefinitely in older settings The nervous system was considered for a long time as a thing apart, a sort of consecrated territory, where only the initiated could be received, and as for its relations to the body, the latter largely existed to permit of those activities, while its mysteriousness was added to by being the repository for much that was not understood

The mind was relegated to a place still further apart, and was dealt with metaphysically until its relations to the nervous system were much more vague than the relations of the nervous system to the rest of the body This state of affairs has been crystallized by the titles of our textbooks, which set forth that they deal with nervous and mental diseases, inferring that these two groups have little relation, the one to the other, and, by the same token, fail to indicate that they either or both have any relation to the rest of the body

All this is wrong The human individual is a biologic unit, his several parts are parts of that unity, and he himself is still part of a greater whole, a particular instance of the manifestations of life Any system of classification, no matter how far it attempts to go in formulating distinct disease trends, should not fail altogether to permit the broader view of the interrelations to show through

From the point of view of the nervous system, how is this to be done? Recent developments in physiology and internal medicine point the way Reference is made to the development in knowledge of the vegetative nervous system and the endocrine glands These developments have served the twofold purpose of bringing the several functions of man into a closer knit harmony and at the same time correlating that harmony with the manifestations of the organic activities as found in lower animals The last has been the result because the developments have had to do with what are called lower, simpler or, more properly, phylogenetically older forms of activity, or modes of reaction

Right here, in the term "phylogenetically older," is the key to the principle of classification—a principle that has long governed in the biologic sciences, the simpler and older merging by insensible gradations into the more complex and more recent It has taken long periods of time and the accumulation of great masses of detailed observations before these facts of wider bearing have emerged that have served to bring all this material together under wider generalizations The older hypotheses have become more and more inadequate, in their prime they were useful, but like all hypotheses, their present aspect of tawdriness is only a sign of progress

For a long time it has been asserted that the nervous system is the means by which all of the several parts of the human unit are integrated, by a species of complicated adjustments to given ends It can be now perceived through the means of the vegetative nervous system and the chemical regulators of metabolism, at the physicochemical level, and the successive compounding of reflexes at the sensorimotor level, how this integration is actually brought to pass, and it is being understood how the human unit is integrated as a whole, and as a whole works consistently toward broadly defined goals, the integration manifesting itself at successively higher and higher levels in the history of the individual and of the species

Viewed in this way, we see the individual struggling along the path of evolution in constant conflict between an inherent inertia that would keep it at a given level, but gradually advancing by a series of give and take compromises that finally bring it to better adjustment to its environment at a higher level of integration

Sherrington has beautifully illustrated this integrative action of the nervous system in the simple reflex with its innervation of agonists on the one hand and antagonists on the other, and the channeling of final common pathways for nervous discharge The conflicting tendencies, the ambivalency, the path of opposites — the final issue in high integrations made possible by tension of reciprocal innervations at sensorimotor levels — is found also to be the rule in the vegetative nervous system, that phylogenetically older division, with its double set of pharmacodynamically demonstrated opposed elements mediated, at least in part, by equally opposed, exciting and inhibiting chemical substances secreted by the endocrine glands, the hormones

Finally an analogous ambivalent mechanism is seen working at the highest, the most complex levels, the psyche, which determines conduct with the assistance of the phenomena called consciousness, in which a psychologic symbolism is found replacing sensory and motor neurons, and exciting and inhibiting hormones

For pragmatic purposes, then, the nervous system may be divided into these three levels of activity, the vegetative or physicochemical, the sensorimotor and the psychic or symbolic

This threefold division of the reactions of the nervous system is the fundamental basis on which a classification may be founded The biologic activities which maintain life at the lowest level are physical and chemical, and so that portion of the nervous system which has directly controlling influences over these activities is properly designated as the vegetative nervous system, and that part of neurology which has to do with a consideration of these physicochemical systems, because it deals with the nervous control of the viscera, is properly designated as visceral neurology

In the region of visceral neurology a rich variety of disturbances is found, involving the glandular, gastro-intestinal, genito-urinary, vascular, respiratory, muscular, cutaneous and bony systems, and in addition certain complex clinical groups involving, for the most part, the glands of internal secretions, the endocrinopathies

Here is a rich field which has been unequally cultivated since Brown-Sequard first tried to discover the fountain of youth in the testicular extracts

While the symptomatology of the neurologic disturbances of the tear, mucous and salivary glands is a limited one, a very rich symptomatology has grown up about the vascular system in the group of vasomotor neuroses There is also a rich field in various directions, for example, in the gastro-intestinal and in the cutaneous disorders, which, however, are for the most part taken over by the specialties dealing with these respective systems, but which nevertheless will receive an adequate explanation only through the teaching of visceral neurology Some portions of the field are as yet too little known to offer much that is of value, as for example, the neurology of the bony system and the nervous mechanisms underlying the regulation of the blood cells, while in other systems the disturbances are known only as contributing symptoms in fairly well-defined clinical groups, as, for example, myasthenia gravis as a disturbance of the muscle vegetative mechanisms The endocrinopathies naturally form a considerable part of visceral neurology, and many of the disturbances of the several systems are still best included in the various clinical groups that are considered as due to disturbances in one or more of the endocrine glands This field today occupies the main focus of attention of the medical practitioners, and much that is false is being taught, but out of the divergent trends sound harmonies will be evolved

If the vegetative nervous system has for its function in the main the maintenance of the vegetative, that is, the metabolic processes of life, such as nutrition, growth, development and sexual maturation, the next higher level, the sensorimotor, has as its function, in the main, further integration by providing the means for the balanced interrelations of the various organs of the body It has to provide that all the various parts of the machine work harmoniously together, that the functions of the various organs are not only properly timed in relation one to the others, but also adequately related on the basis of the functional demands made on them

This field of sensorimotor neurology, including the disorders of the cranial and peripheral nerves, the spinal cord, pons, brain stem, midbrain, cerebellum and cerebrum, is that portion of neurology to which the term "neurology" is generally thought of as applying, to all intents and purposes, exclusively Here the field is pretty well cultivated, and the classification based on the anatomic divisions as just outlined pretty well accepted

The third, the highest, the psychic level is the most complex Its function is no longer simply one of integration of the various parts of the individual but at its highest, conscious level it has to do with the relation of the individual as a whole to his environment and more especially to his social environment

At this level it has been the prevalent custom to think only of consciousness, and of conduct consciously regulated by intelligence Ideas are symbols, they are symbols of the contemplated action on things through which the individual comes to an efficient adjustment with his environment by controlling them The symbol becomes, therefore, a carrier of energy which is translated into conduct

The ways in which these psychic symbolizations work at the highest conscious levels is pretty well formulated in current psychology, and these ways work very well so long as there is nothing unusual the matter with the whole machine The great error of the psychologist, however, has been to suppose that the matter stopped here The lower animals exhibit most complex forms of behavior without its being thought necessary to ascribe conscious motives (intelligence) to them in explanation Very complicated activities low down in the biologic scale are ascribed to tropisms, while for man it has been supposed that what he did he consciously intended Recent studies in psychopathology have changed all this, and it is thoroughly well established that lying back of consciousness is a much larger, a much more important territory which furnishes psychic motivation of conduct, and, in fact, that conscious processes as they are known to the individual are largely, if not altogether, determined by what lies in this region — the unconscious

Psychic symbols — ideas, feelings — must therefore be traced farther back than the conscious level at which the individual is acquainted with them in order to understand their real meanings Psychanalysis is as important for the understanding of the construction of the psyche as dissection is for the understanding of the body, or chemical analysis for the understanding of the constitution of the molecule

The greatest deficiency in the psychology of the nineteenth century relative to the understanding of human conduct has been the neglect of the importance of the unconscious

For centuries man has marveled and speculated and gathered observations concerning the exquisite subtleties of adaptation of plant structures to their environment The four-volume epitome of Korner von Marilaun sets before the eyes of the nature lover the merest indications of the manifold activities in this field Students of nature — to mention only the list of names from Aristotle to Fabre, would fill a volume — have recorded in encyclopedic proportions the intricacies of nature's story of the conduct of the lower animals from protozoa to highest ape These activities are relegated to tropisms and to instincts Man alone supposes he can explain his own conduct by reference to that which appears in his consciousness, unmindful of the millions of years of evolution preceding that which he has designated as his conscious activities

With the help of the hypothesis of the unconscious, however, it has come to be recognized that the psyche has its embryology and its comparative anatomy — in short, its history — just as the body has, and in precisely the same way as in the care of the body this history has to be utilized before we can understand it

So long as the unconscious failed to be recognized, just so long was the gap between so-called body and so-called mind too wide to be bridged, and so there arose the two concepts, body and mind, which gave origin to the necessity of defining their relations Consciousness covered over and obscured the inner organs of the psyche just as the skin hides the inner organs of the body from vision But just as a knowledge of the body first became possible by the removal of the skin and the revealing of the structures that lay beneath, so a knowledge of the psyche first became possible when the outer covering of consciousness was penetrated and what lay at greater depth was revealed As soon as this was done, the wonderful history of the psyche began to give up its secrets, and the distinction between body and mind began to dissolve, until now it has come to be considered that the psyche is the end-result in an orderly series of progressions in which the body has used successively more complex tools to deal with the problems of integration and adjustment The hormone is the type of tool at the physicochemical level, the reflex at the sensorimotor level, and finally, the symbol at the psychic level

In the phylogenetic history of that development which culminates in man, the symbol has been developed after trying and laying aside in the past all other tools, because it alone offers the means of unlimited development of man's control over nature The hormone, the reflex, are confined in their capacities for reaction within relatively narrow limits of possibilities The symbol is capable of infinite change and adjustment, and so has grown out of the necessity created by ever increasing demands The growth from the lowest to the highest, from the youngest to the oldest, from the simplest to the most complex has been here, as everywhere in nature, without gaps

64 West Fifty-Sixth Street—Government Hospital for the Insane

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THE PHILOLOGY OF HYSTERIA

AN A PRIORI STUDY OF THE NEUROSES IN THE LIGHT OF FREUDIAN PSYCHOLOGY

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The most startling advance that has been made of late years in the domain of mental medicine is the discovery that psychic disorders—the more popularly designated "nervous" disorders—embody a concealed moral conflict due to the survival in an unconscious form of racial instincts and emotions which are no longer compatible with the ethical tendencies of the personality and which therefore have been repressed by the collective social consciousness It is the reassertion of these long repudiated trends in the midst of our present day civilization, together with the attendant inner conflict, that is now regarded as the fundamental factor in these disturbed psychic states

In his work "Adolescence," published in 1905, in which he announces to English readers the trend of the recent investigations of abnormal psychology in regard to hysteria and allied disorders, Dr Stanley Hall says

> Mental pain becomes local neuralgia, moral disgust becomes nausea anxiety becomes contraction or cramp, if shunted downward, and so through a long list of psychophysic kinetic equivalents which with all their wealth of symbolism is yet to be fully worked out Such metamorphoses constitute the mystery of the domestic demon of hysteria and account for many adolescent symptoms

At the time that Dr Hall wrote this sentence the meaning of the disorders to which he referred had not as yet, as he said, been fully worked out Indeed, the conception which presupposed that a psychologic meaning lay back of these disorders had been only recently advanced To apply to nervous disorders the concept of "meaning" in any psychologic sense is to interpret these manifestations in the light of a purpose, of an intention, of a process pursuant to an end It is to recognize in these disorders an effort toward the fulfilment of design It is to ascribe to these processes the operation of human personality Thus with a deeper insight into the causation of neurotic states, science has been compelled to divest itself of its materialistic dogmatism and to reckon at last with the fundamental element of will

This revolutionary trend owes its special impetus to the researches of the European neurologist, Sigmund Freud, ably furthered by the brilliant studies of the Swiss psychologist, C G Jung, and to those broad biologic interpretations introduced into the field of mental pathology through the teachings of Adolf Meyer It may be said unhesitatingly that the entrance of this conception into the study of nervous disorders marks the beginning of the most important epoch in the history of modern medicine It is called the dynamic conception

Through this altered conception, medicine has taken on a very different aspect in regard to what is perhaps its widest and most significant field Into this field there are now introduced measurements, valuations and criteria of a totally new and different order From this new angle of observation, physicians are brought face to face with the vital problems of human character They begin to see more clearly into the deeper springs of motive and of conduct and so are acquiring a more intelligent and sympathetic understanding of the forces which lie back of and determine human needs, human growth, human adaptation, human life Medicine now includes among its data expressions indicative of the demands of the instinctive life It takes cognizance at last of such very real factors as "the hunger of the human heart," not in any rhapsodic literary sense, but lifted out of its poetic context and transposed to its rightful setting amid the archives of science The result is that today the consulting rooms of the psychopathologist have become special laboratories in which the physician is engaged in the analysis of those elements of the personality which constitute that totality of experience we know as life

It will be readily understood that in the reconstruction of the shattered purposes, the frustrated hopes and the outraged instincts which are found to lie at the source of those human woes we call "nervous disorders," there takes place a gradual transposition of values, a total recasting of ideas, and that, through this process, education in the deepest meaning of the word enters at last into its full and sovereign rights

In view of the vast importance for the communal weal of this complete change of front on the part of abnormal psychology, it is eminently worth while to consider carefully the basic principle that underlies this dynamic conception of nervous disorders as exemplified in the sentence of our text "Mental pain becomes local neuralgia, moral disgust becomes nausea, anxiety becomes contraction or cramp " Here we have the phenomenon of a psychic emotion being relayed into a physical equivalent This process Freud calls the "mechanism of conversion " This principle of conversion is the crux of Freud's psychology of the neuroses

When we come to study the philosophy of this principle it is after all quite simple The wonder is that we could have closed our eyes these many years to anything so obvious Indeed, the sluggishness of our perception in this connection is only explicable on the plea of our habitual bondage to traditional bias So that when we consider it we cannot help wondering what still newer and clearer truths are even now perhaps at our very hand, when we shall have sufficiently overcome the prejudice of our customary thought habits to view them in their unconventional simplicity

There is somewhere a passage in "The Mill on the Floss" in which George Eliot remarks that it is indeed a noteworthy fact that through some peculiar faculty of the human mind, whenever we wish to say what a thing is, instead of stating directly what it *is*, we keep forever saying what it is *like* Nietzsche expresses the same thing when he says "Every idea originates through equating the unequal " In such statements there is embodied the fundamental principle of human psychology

The essence of language consists in the statement of resemblance The expression of human thought is an expression of association Every idea whether felt or conveyed entails such an association Thought is the recognition of likeness, language is the expression of likeness Human thought and human language represent thus the gradual building up of an increasingly complex system of associations All that human thought ever attains to, as represented through the various mediums of human intercourse, whether in the earliest monosyllabic utterances of the young infant or in the condensed and intricate formulations of the man of science—all these manifestations, when reduced to their psychologic elements, are found to consist of *associations of similarity*

If we will trace back to the earliest philologic sources, we find that the language of primitive man was mimetic That is to say, man's earliest attempts toward communication or the establishment of associations consisted of movements of mimicry or imitation, whether vocal or gesticulatory The vestiges of this pantomimic speech of prehistoric man are directly traceable in many of the linguistic forms of present day usage The stage of vocal mimicry is preserved today in the use of onomatopoeic words, representing through imitation the original sound of the object described, for example, the "tick" of a clock, the "rustling" of leaves, the "bubbling" of a spring, the "click" of a latch, the "humming" of an insect [1]

This primitive language of the race is equally preserved in the gesticulatory symbols with which we today express our thought—symbols in which we find the origin of the early drama We give expression to a sense of disgust or of a bad taste through an instinctive turning away of the head, or a wry face, or through thrusting the hands outward, with palms everted—a gesture clearly suggestive of pushing something from us What is so suggestive of unconcern as a shrug of the shoulders? And why? Because this dramatic movement is a mimetic symbol for throwing off the burden of responsibility Primitive man carried his burden on his shoulders—his fuel, his food, his offspring [2] His shoulders then were not light, not free They were borne down by these man's elemental cares [3] And so in this familiar shrug of the shoulders there are retained the philologic traces of the primitive language of our forebears And man today expresses through this symbol his freedom from concern or his indifference,[4] as we say If we turn to the study of the more obviously biologic mediums of language—to the expressions of the emotions in men and animals as pointed out by Darwin, the organic appropriateness of these reactions becomes more evident still [5]

We see, then, that language is not haphazard or arbitrary We see that a dynamic element underlies its manifestations, that it is actuated from the inner necessity of organic law, that it is prehistoric, inherent, unconscious, physiologic Because of this organic inherence of our unconscious language, its testimony is indisputable And so we are enabled to judge the characters of men through their use of such unconscious mimetic expressions The honest man looks you calmly in the eye He does so in response to a law of his very nature Out of obedience to this same law, we in turn call such a man "upright," "straight" Conversely, from the same organic necessity, the deceitful man is, as we say, "shamefaced" He must perforce crouch and turn aside He dares not confront you squarely, and for such a man the popular epithet is "crooked" Thus everything that a man is is proclaimed in everything that he does—his voice, his walk, his handwriting, his apparel, all are descriptive of himself because all *are* himself "As a man thinketh, so is he" As Emerson says, "What you are speaks so loudly to me that I cannot hear what you say"

This connection between inner thought and outer action is so inherent and inseparable that any attempt to evade this inevitable law of self-expression causes a discrepancy in our organic reactions which straightway gives the lie to our conduct If any one comes to you and tells you that he is honest and diligent, and at the same time lowers his eyes and holds his thumb close against the palm of his hand, do not believe him There is a discrepancy between his words and the silent testimony of his unconscious utterances Bulwer Lytton was psychologist enough to use to splendid dramatic purpose this unconscious evidence of an inner organic disharmony You remember in his play "Richelieu, how he makes the old cardinal save himself from death at the hands of assassins by detecting at the critical moment just such a discrepancy on the part of his trusted servant-in-waiting You remember, as the man makes his usual obeisance and retires for the night, Richelieu, with quick intuition, perceives some difference in his demeanor—there is something unfamiliar, and turning to his secretary he says, "Joseph, he bowed too low " This man was harboring in his bosom a treacherous design In his effort to conceal it he overdid his deference, he "overcompensated," as the psychologist would say, and in this very act he was betrayed

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[1] Language can produce no more powerful effect than through the conscious reversion to this elemental form The reader will recall how Homer heightens the vividness of description in his classic line through the mimetic twang of the double gamma One not only sees, but distinctly hears the arrow go singing through the air

> *ἕζετ' ἔπειτ' ἀπάνευθε νεῶν, μετὰ δ' ἰὸν ἧκεν·*
> *δεινη δὲ κλαγγη γένετ' ἀργυρέοιο βιοῖο*
>
> —Iliad, Book I, Lines 48, 49

[2] Anglo Saxon bairn = burden, or child

[3] In this connection it seemed to the writer that between the words "care" and "carry" there must be a fundamental psychobiologic correlation, but on looking into the etymology of these words no direct evidence was found to sustain this view Holding however, to what he conceives to be an organic principle of philology, the question was referred to expert opinion, and it was learned that the sources of philology do indeed sustain this psychobiologic inference, for, through the collateral word "charge," "care' and "carry" are as a matter of fact etymologically related

[4] The word "indifference" again brings us back to the same biologic origin On analysis it contains the Latin words "to bear," "carry," "support," and the negative prefix "in" Hence it is "not carrying," "not burdened"

[5] In attitudes of attack or defense we find that an organism stiffens because the stiffened muscle is harder, more resistant, more powerful Contrariwise, in defeat and in flight, as Darwin has shown, there is the precisely opposite reaction the organism shows suppleness, relaxation, the characteristic unresisting posture of surrender

Language teems with usages bearing organic implications Such phrases as "broken-hearted," "dumb with amazement," "burning with shame," "choked with rage," "breathless with suspense," or, conversely, "a sigh of relief," are familiar instances of these organic expressions

We see, then, that language is not to be divorced from nature, that it is a thing inherent, not accidental, and that it has arisen from organic necessity, and is thus biologic So much for this principle of organic fidelity which underlies man's natural mediums of expression

I have said that thought consists essentially of an assertion of likeness, that it is built up of associations or resemblances, and we have further seen that the human mind communicates its thought through recourse to metonymies, that it calls one thing by the name of something else resembling it, that language is built on analogies, that it is metaphorical If we will observe carefully we shall find that there is very great latitude in our choice of analogies Observing more closely still, we shall see that the farthest stretches of metaphor, that is, the highest degrees of distortion, are found to exist where moral and social prohibition enters most forcibly into the thought content That is to say, the more disagreeable an idea, the more we seek to render it imperceptible or unconscious, the stronger the moral proscription, the more remote is the resemblance indicated, the stronger there enters the element of social interdiction, the more far-fetched or concealed is the linguistic symbol we employ to designate the thought in question

The element of moral weakness that lies back of this tendency is plainly enough felt It takes courage to call things by their true name The man who, scorning obliquities, calls a spade a spade, straightway compels our respect The general popularity, on the other hand, of the more roundabout course, is shown in the softer tone of intimation so universally adopted by the social mind In the political cartoons we see this mechanism well illustrated Under the disguise of a quite absurd and exaggerated drawing it becomes possible to express with impunity a sentiment of such hostility as would be seriously offensive and render the newspapers subject to libel were it put forth in the form of language commonly current

The instances which mythology affords of such symbolic representations of the covert aspirations of primitive man form a chapter to themselves[6] Such, too, we know today, is the stuff that dreams are made of In these representations of our unconscious mind we find a regression to a primitive, archaic form of ideation, of which the essence is symbolism[7] For in dreams are expressed allegories under which we symbolize the secret, morally inadmissible desires of our natures In these unconscious charades we pay respect to those yearnings which the hard adaptations of our waking consciousness deny us

Finally, the study of the anatomy of language itself shows this principle of disguise to be its very backbone In our customary verbal usage there are innumerable instances of this device The more nearly we approach forbidden territory — the territory on which popular social sentiment has imposed its moral embargo — the stronger is the tendency to conceal our meaning through recourse to remotely associated symbols of expression To take a quite familiar example what, on a superficial view, could be more utterly dissimilar than a red light and the commerce of prostitution? The word "prostitution," though, is flagrant, bold, shocking It blazons the unpleasant, ruthlessly dragging before us the existence of a condition in society on which a moral stigma has been placed The moral repugnance here entailed is patent enough We therefore use instead a symbol which in its remoteness is apparently quite harmless What could offer less outrage to our sensibilities than the concept "red light"? What could be more free from any immoral connotation? And so when the church, society or the press wishes to speak of the resorts of the social evil, it has recourse to this disguised and innocuous metaphor of the "red light," and with due regard for the proprieties it henceforth refers with an unruffled calm to the "red light district "

But let us see Is this symbol as innocent as it appears? Is it after all so remote, so arbitrary, or does it prove on analysis to be connected with the concept for which it stands by reason of that organic correlation of which we have spoken? If we will look into the history of the social consciousness as expressed in the different spheres of symbolism, in folk-lore, in religion, in literature and in mythology, we find that redness and warmth are the universal symbols of passion and of lust, for example, we speak of the "heat of passion," the "fire of love" You remember the symbol of the Scarlet Letter, or, more closely still, the "scarlet woman," and the devil himself, the mythological symbol under which the carnal appetites are personified, is invariably pictured as clothed in red and as enveloped in flame The metaphorical red light was not chosen at random then, but because of its organic relation to the concept which it symbolizes, and the "red light district" is therefore quite an apt phrase after all

We see, then, that our human forms of expression are full of such roundabout expedients — such symbolic substitutions and evasions with which we seek to mitigate the poignancy of actuality

Having considered the organic dynamism which in general underlies our human forms of communication, and having considered the principle whereby a concept is rendered less perceptible to consciousness in proportion to the degree of the moral repugnance of such concept, let us turn to the consideration of the psychologic meaning of the disorder we call hysteria

We know it to be characteristic of hysteria that it defies definition and systematization, that it flouts all attempts at classification and description Its forms are protean, its manifestations infinite in their variety

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[6] Frazier, James George The Golden Bough

[7] Freud Die Traumdeutung

There is no such thing as an adequate textbook of hysteria There never can be This disorder is not to be compassed within the bounds of any text One might as soon attempt to reduce to the limits of a text the manifestations of life itself

What, then, is hysteria? What is its meaning? Basing my thesis on the principles derived from researches into the psychology of this disorder as introduced by Freud, I contend that the same dynamic factor which we find to obtain in the development of language — the tendency of the human mind to disguise whatever is unpleasant — is the identical principle which actuates the development of the conditions which we recognize as hysteria and that the same unconscious overcompensation which we saw a moment ago to be the inevitable outcome of the attempt to conceal the underlying purpose of one's conscious desire is the inherent account of the exaggerated manifestations of conduct which constitute the so-called symptoms of this disorder[8]

We have seen the tendency of human consciousness to disguise whatever is unpleasant, to mitigate whatever is painful, and as it were to turn away from it through the adoption of a usage such as serves to lead the mind aside of the immediate issue We have seen that to this end the human mind has recourse to metaphor, to metonymy, to the substitution of analogies, and that the implied resemblance in such figures is less articulate, less conscious in proportion to the moral proscription attaching to the original idea We observed that the effort of concealment is attested by the increasingly subtle nature of the metaphor employed, that it grows most elusive with the approach to concepts bearing the strongest moral incrimination, and we have seen that this principle is a universal principle of consciousness

When we come to test this principle with respect to the more organic needs of expression — the needs pertaining to the instinctive life of the organism — we find that, through the ultimata of society, the expressions of the instinctive life, particularly those pertaining to the instinct of sex, have been despotically deprived of legitimate language The strongest instinct of life is forbidden free speech Those socially integrative forces which tend toward the perpetuation of the species are ruthlessly repudiated and repressed But there are instincts within us which will not be silenced Their utterance is eternal Their voice cries from out the depths of the remotest age of man Such vital, biologic demands as belong to the sex instinct are among those impulses which are too dynamic to be wholly silenced What is the recourse of the organism under the pressure of such an artificial ukase?

I maintain that there is here repeated once more the mechanism with which we have grown familiar — the mechanism to which human consciousness ever has recourse when it must give utterance to sentiments which have been ignorantly penalized under the code of social proscription Being socially anathema, these impulses of the primitive instinctive life seek the only vent permissible under the existing censorship, and issue forth in disguised *equivalents* They resort to obscurities, concealments, innuendos, to hidden symbolisms, strained metaphors, remote analogies, far-fetched metonymies, exaggerated similes, and the symptoms of the neurotic *patient, with* his agonizing fears, tantalizing doubts, abysmal depressions, compelling ceremonials, relentless imperatives and torturing obsessions are a witness to the mental agony which the enforcement of such organic discrepancies entails For language, being here organic, expresses *itself* in organic terms, and there result those organic substitutions and distortions, which, as elsewhere, are relative in intensity to the moral repugnance pertaining to the ideas they symbolize

Accordingly the mimetic movements into which the most vital meanings of the organism become thus converted in the neurotic subject — the neuralgias, the nauseas, the contractions, as Dr Hall says, not to mention the paralyses, anesthesias, stammerings, mutisms, spasms and all the rest of these protean appearances — are the concealed expressions of vital outlawed trends Distorted out of their original meaning, they represent organic metaphors analogous to the figurative disguises which we have seen to be a universal principle of language

Of course the average wayfarer — the so-called normal individual — falls a ready prey to the moral compromise of metaphor and indirection which language affords He accepts without protest whatever disfigurements of nature's verities society demands And so, adopting the course of convention, he moves on with the popular tide The "normal" man is not one to "battle and perish for a dream of good" In his bosom there rages no life and death struggle of an inherent conviction of right against the cowardice and falsehood of convention Being average, he pursues the average course Possessing no overrefined perceptions, no exaggerated sensitiveness to innate, organic truth, he follows without demur the ordained routine of things It is the easiest way, this program of subterfuge, of compromise, of capitulation But if we will observe our fellow human beings carefully, we shall find that here and there among them there are personalities of a finer, more delicate weave, more "sensitive personalities," as we say, men and women endowed somehow with a clearer intuition of truth, with a deeper sense of values than normally exists among us It is characteristic of such personalities that they cannot comfortably permit themselves any such sinister evasions Imbued with some innate fidelity, they cannot accept the course of compromise The part of hypocrisy is utterly intolerable to them Resolutely refusing to resign his birthright, such a personality serves with a faith that is cosmic the inner voice of organic law Under the circumstances he is driven to adopt what seems the only honorable course open to him — that of rigid repression He resolves to stifle completely this cry of an inherent instinct

In consequence of the moral conflict from which no escape is offered it, such a personality becomes more and more deeply withdrawn, introverted and repressed, until life has at last become so wracked and inhibited as to be scarcely longer endurable Such is the typical state of mind of a person suffering from a neurosis[9]

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[8] The popular ruse to which language has recourse is nowhere better exemplified than in our custom of *resorting to* a foreign tongue as we approach the precincts on which society has impaled its moral taboo Greek and Latin appear to afford an especially soothing unction for our social sensibilities Such a form of palliation is to be seen in the name of the very disorder we are here considering Hysteria means uterus or womb We put it into Greek and suspect nothing, but as a matter of fact, through this politely disguised designation it is shown that the disorders of hysteria have been unconsciously felt all along to be allied to the generative organs and to the sexual instinct And so here again we are forced by the same organic law of language to return to philological sources for the rediscovery of its inherent meanings

[9] Comparable to this *reaction of the* individual is the state of the social mind when, long cheated and denied, it suddenly *issues forth* in those periodic moods *of* defiance against form and authority which mark the history of revolutions

When the manifestations of such a disordered mental state — the so-called "symptoms," the memory lapses, the habit-reactions, and above all the dreams of the patient — are subjected to psychanalysis, it is found that these manifestations of the personality are a secret code affording a clue to the nature of these inadmissible trends We find on analysis that these expressions contain a remote association with such unseemly tendencies, that by virtue of its remoteness such tendencies have been rendered invisible, unconscious, and finally that the degree of distortion of such an associative disguise varies in direct ratio to the intensity of the moral repugnance of the trend thus symbolized When an individual is disturbed by a phobia of which the content is, to cite a typical example, that his tailor has inadvertently left germs beneath the stitching about the buttonholes of his coat, it is found on analysis that the danger of infection is by no means his real concern, but that this apparent apprehension is a mere metaphorical or symbolic substitution designed to mitigate the moral repugnance of a far more poignant prepossession

Here, then, we see, underlying the mental pathology of the neuroses, a repetition of the same mechanism of unconscious association which we have already studied in the methaphorical substitutions of language There, we studied this mechanism in respect to the social aggregate Here, we study it in respect to the individual unit

We see, then, that hysteria is in a sense not so much a disease as a dilemma, that it represents an inherent conflict within the personality, that this conflict is due to a repression which in its essence involves an intolerable contradiction, that the contending elements assembled within the personality of the neurotic patient are, under the conditions of repression, rendered utterly irreconcilable We have further seen that the distressing symptoms of the neuroses are an *unconscious metaphor* representing an enforced disguise whereby through repression the organism struggles to attain the mitigation of trends which are too vital and inalienable to be wholly denied An analysis reveals thus an essentially similar psychologic mechanism between the formation of these mimetic symbols expressive of the drama of hysteria and the metaphorical symbols of language through which the drama of human life finds its expression

It is because of this inherently human, psychologic meaning which is embodied in the neuroses and its genetic correlation with the original mediums of human expression that I have ventured to interpret hysteria as an expression of organic philology To many undoubtedly this interpretation will seem to entail unwelcome implications They will complain that my thesis posits an inherent duplicity as the fundamental principle of consciousness, and will bitterly resent so sweeping an indictment of the human mind But if they will examine the matter more closely, they need be by no means inconsolable For even though my indictment be true, it is but a part of the truth and by far the lesser part For nowhere does nature proclaim more stoutly the essential truth of the human spirit than in precisely this organic revolt which underlies the conflict of emotions presented in those distorted expressions we call hysteria

In this recoil of the mind against the artificial inculcation of false methods of valuation, it is seen that far deeper than all the artifices of temporary expedience lies the unalterable aspiration of the soul toward permanence and truth Let men in their mistakenness contend as they will against their inherent natures, yet the organic verities within them will ultimately prevail So that by whatever device we may seek to repress the energy of our instinctive needs, it will but reappear in the altered and concealed guise of some inexpugnable equivalent Such is, I think, the account of those "metamorphoses" which constitute, as Dr Hall says, "the mystery of the domestic demon of hysteria"

Regarding hysteria, then, as an expression of organic philology, as a straining of metaphor in the organic sphere, analogous to the strained figurative usage obtaining in the social sphere, the rationale of a method of correction which seeks, through the gradual reeducation of the will, to reconvert those distorted expressions now existing under the symbols of diseased symptoms into their original elements becomes clear If the symptoms of hysteria represent in reality the distorted expressions of the wracked human soul, whose features have been twisted out of their natural semblance through the pain of inherent discord and denial, clearly the logical course is to reconvert such disguised equivalents into their original terms, by reestablishing in consciousness the true meanings which these figurative compromises have replaced

To understand the expressions of the human organism presented under the aspect of "nervous disorders," we need to review the rudiments of language, to return to the philology of nature and of life and reread their meanings in the light of their original text In the daily hurry of events we have no time for early sources, and so we have come to blunder miserably in our interpretation of the most important chapters of human evolution How widespread is our ignorance of the grammar of mental biology may be directly gaged by the prevalence of this organic social error which is known medically as hysteria

I believe that the hope of successfully combating this anomalous product of our artificial civilization lies in the clearer realization, on the part of thoughtful parents and educators as well as physicians, of the dynamic causes underlying this disorder, of its essentially human, psychologic basis, and of the necessary recourse to analysis and education as the rational method of readjustment

Charles Street and Mount Vernon Place

Trachoma —The establishment of small hospitals for the treatment of trachoma is recommended in the annual report of the surgeon-general, U S P H S, as being the best means of combating this disease Five trachoma hospitals have been established by the service in Kentucky, Virginia and West Virginia, and in the past fiscal year 12,000 patients were treated, most of whom were cured and the remainder improved, so that they will not be sources of infection to others The hospitals established have also served as centers of education for the people of the surrounding communities, and the physicians and nurses connected with them have visited the homes of hundreds of families, instructing them how to prevent the disease, with the result also that the general hygiene of these communities has been improved Surveys among schoolchildren in sixteen counties in Kentucky have shown among 18,000 examined that there was an incidence of 7 per cent of the disease, and similar inspections in Arizona, Alabama and Florida disclosed the disease in from three to six out of every hundred children examined Lectures and clinics before medical societies in localities where hospitals could not be established have also been features of the campaign against trachoma

THE LATENT RÂLE IN THE DIAGNOSIS OF INCIPIENT TUBERCULOSIS *

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The term "latent" as here employed designates the râle elicited only by the aid of cough Any originality is disclaimed in the use of the word latent to designate this type of râle, since Willson[1] and others have previously referred to râles elicited by cough as latent signs In the majority of patients in the early stage of the disease, and in some instances of advanced disease, it is, to the exclusion of all others, the only râle heard In both the early and the advanced types of lesion, it seems probable that râles of very feeble intensity are produced during forced respiration, which *remain* inaudible, latent or concealed until cough is employed This theory receives support in those instances in which indistinct sounds suggesting râles on deep breathing are replaced by demonstrable râles after cough Special contributions devoted to the diagnosis of incipient pulmonary tuberculosis have specifically indicated the value to be attached to this procedure (Turban,[2] Hess,[3] Reineboth,[4] Cornet,[5] Brown,[6] Pryor,[7] Otis,[8] Whitney,[9] Bandelier-Roepke,[10] Ogden,[11] Bonney[12]) Garvin[13] in a recent communication explains the procedure in detail and notes its value Of interest in this respect was the advice *imparted by the* elder Janeway to his pupil, Trudeau,[14] about forty years ago, previous to the latter's memorable pilgrimage to the Adirondacks in search of health "Invariably employ cough to elicit râles in tuberculosis"

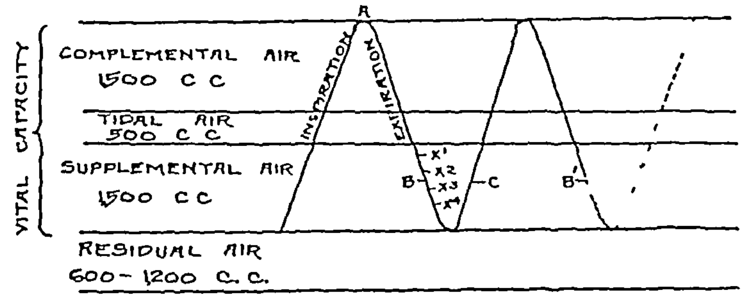

Fig 1—Diagram illustrative of the interpolation of the cough at different points in the respiratory cycle and the occurrence of rales following cough

The present study was undertaken to determine the incidence of râles before and after the act of coughing in incipient pulmonary disease, a study heretofore little considered, but which offers a means by which the diagnostic value of this procedure may be established The statistics presented are based on a study of the physical examination of 226 patients at the New York State Hospital for Incipient Pulmonary Tuberculosis The modification of Turban's classification adopted by the National Association *for the Study* and Prevention of Tuberculosis recognizes *three stages* in the clinical course of the disease According to this classification 139 cases of the present series were grouped as incipient, and eighty-seven as moderately advanced Tubercle bacilli were demonstrated in 21 58 per cent of the early cases and in 47 12 per cent of the moderately advanced The physical examination showed definite evidence of incipient disease in 131 instances, or 94 24 per cent, and negative findings in eight instances, or 5 76 per cent

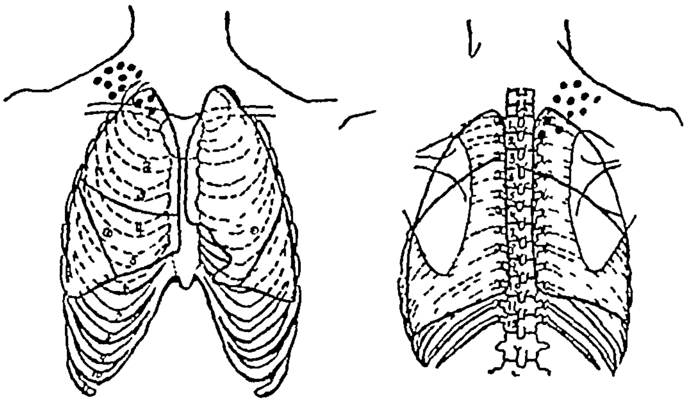

Fig 2 — (Case 3449) — Tubercle bacilli present, illustrative of the latent rale area in incipient disease In this group the latent rale alone is heard in 75 per cent of the cases Roentgenogram confirms the presence of a lesion at the *right* apex

Table 1 indicates that the site of the initial lesion was in the upper half of the chest in over 80 per cent of the cases, and in the lower half of the chest *in* 8 per cent, in the remaining 12 per cent, both apex and base were involved

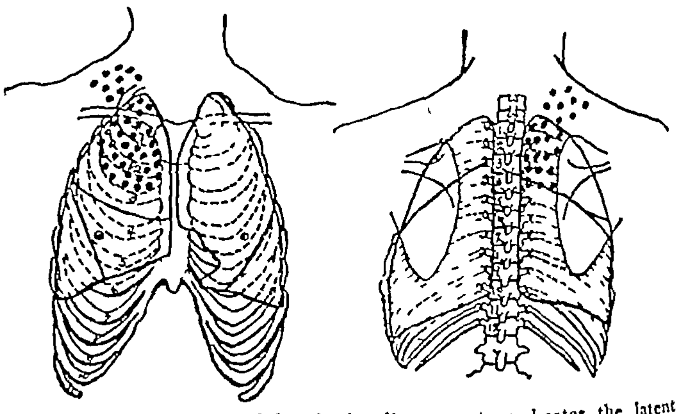

Fig 3 —(Case *3231*) —Tubercle bacilli present indicates the latent rale zone in moderately advanced disease In this *group* the latent rale alone is heard *in* approximately *30* per cent of *the* cases The roentgenogram presents a shadow more extensive than that of the rale zone

Table 2 illustrates the occurrence of râles in 139 instances of incipient disease Of this number, 131 showed demonstrable evidence of disease on physical examination The râle incidence of the total number of cases was 82 73 per cent If the eight sign-free cases be excluded from the table, the percentage of râle positive cases would be materially increased, that is from approximately 82 to 88 per cent

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* From the New York State Hospital for Incipient Pulmonary Tuberculosis

* Read before the Ontario Medical Association, Peterborough, Ontario, Canada, May 27, 1915

[1] Willson, R N The Diagnosis of Incipient Thoracic Tuberculosis Internat Clin, 1905, ii, Series 15, p 50

[2] Turban, K Beitrage zur Kenntniss der Lungen Tuberculose, Wiesbaden, J F Bergmann, 1899, p 68

[3] Hess, Karl Ueber die Diagnose, speciell die fruh Diagnose, der Lungentuberkulose Ztschr f. Prakt Aer, 1901, x, 697

[4] Reineboth, H Die physikalische Diagnostic der Lungentuberculose, Berl Klin, September, 1901

[5] Cornet, G Die Tuberculose, Ed 1, Vienna, Alfred Hölder, 1907, ii, 674

[6] Brown, L The Diagnosis of Early Pulmonary Tuberculosis, New York State Jour Med, 1908, viii, 234

[7] Pryor, J H Early Diagnosis and Treatment of Pulmonary Tuberculosis, Med Rec, New York, 1908, lxxiii, 9, Examination of the Exposed as a Factor in the *Prevention and* Relief of Tuberculosis New York State Jour Med, January, 1914

[8] Otis Edward O The Early Diagnosis of Pulmonary Tuberculosis for the General Practitioner, Boston Med and Surg Jour, 1907, clvii, 361

[9] Whitney, quoted by Otis (Footnote 8)

[10] Bandelier Roepke Die Klinik der Tuberculose, Ed 1, Wurzburg, Curt Kabitzsch, 1914, p 70

Factors Frequently Overlooked in the Early

[11] Ogden, W E Canadian Med Assn Jour, 1912, Diagnosis of Pulmonary Tuberculosis, ii, 200

Pulmonary Tuberculosis and Its Complications,

[12] Bonney, S G Philadelphia, W B Saunders, 1908, Ed 1, p 220

Auscultation of Cough, New York State Jour

[13] Garvin, A H Med, 1911, xi, 475

[14] Trudeau, E L Personal communication

Dry rales were noted in 101 instances or 87.82 per cent in fourteen, or 12.18 per cent, the rales were moist

TABLE 1—SITE OF THE DISEASE IN 131 CASES OF INCIPIENT TUBERCULOSIS WITH POSITIVE SIGNS

Location of Lesion	Incidence	Per Cent
Right apex	39	29.77
Left apex	27	20.61
Right and left apices	41	31.29
Right base	6	4.58
Left base	5	3.81
Right apex and right base	5	3.81
Right apex and left base	4	3.05
Left apex and left base	3	2.29
Left apex and right base	1	0.76
Totals	131	100.00

In the 115 rale-positive cases the predominant type of rale was the fine dry rale the coarse sibilant and sonorous rales were the least frequently encountered

If the cases are classified on the basis of the presence of râles before and after cough, in only twenty-seven instances or 23.47 per cent, rales were demonstrated without the aid of cough, while in eighty-eight instances or 76.53 per cent, the rales were latent, being demonstrable only by the aid of cough

TABLE 2—INCIDENCE OF RALES IN 139 CASES OF INCIPIENT TUBERCULOSIS

	Positive	Negative	Total
Physical examination	131	8	139
Incidence of rales	115	24	139
Percentage incidence	82.73	17.27	100

TABLE 3—CHARACTER OF THE RALES IN 115 INCIPIENT CASES

Character of rale	Incidence	Per Cent
Fine rales	78	67.83
Fine and medium	14	12.17
Medium	18	15.65
Medium and coarse	2	1.73
Fine and sibilant	2	1.73
Medium and sonorous	1	.86
Totals	115	100.00

In determining the incidence of râles before and after cough, great care was exercised to include in the class showing râles before cough all those in which there was the *faintest* suspicion of their presence Attention was particularly directed during the examination to the character of the breathing, and it was unconditionally demanded that the respiratory excursion in every instance should be deep and sharp before concluding that rales were absent, and that cough was necessary to establish their presence Under these exacting conditions more than 75 per cent of the cases studied showed the presence of râles only after cough

TABLE 4—INCIDENCE OF RÂLES BEFORE AND AFTER COUGH IN 115 CASES OF INCIPIENT TUBERCULOSIS EXHIBITING RALES

Rales	Incidence	Per Cent
Without the aid of cough	27	23.47
Only after cough	88	76.53
	115	100.00

TABLE 5—INCIDENCE OF RALES BEFORE AND AFTER COUGH IN EIGHTY SEVEN CASES OF MODERATELY ADVANCED TUBERCULOSIS EXHIBITING RÂLES

Rales	Number of Cases	Per Cent
Without aid of cough	63	72.50
Only after cough	24	27.50
Totals	87	100.00

The value of cough in demonstrating the latent râle is probably best illustrated in cases presenting a well defined lesion This is strikingly exemplified in the series given in Table 5, comprising eighty-seven moderately advanced cases

Notwithstanding the gross pulmonary infiltration, 27.5 per cent of these cases showed no evidence of rales prior to the use of cough

An increase in the number and distribution of rales was invariably noted after cough in the great majority of the patients exhibiting this sign on deep breathing In several instances showers of rales were elicited after cough whereas previous to the employment of this procedure only a few indefinite clicks could be heard

From the tables the following essential facts may be deduced

1 In tuberculosis the site of election is the apex

2 Rales occur with great frequency

3 The predominant rale of incipient disease is the fine dry rale the sibilant, sonorous and coarse rale occurring relatively seldom

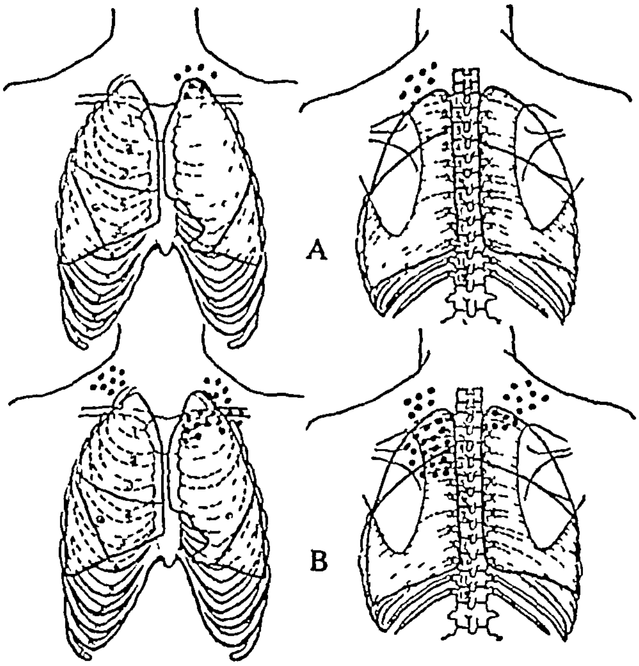

Fig 4—(Case 3516)—Tubercle bacilli present *A* before cough, *B* after cough illustrates the difference in the number and distribution of rales before and after cough in moderately advanced disease

4 The latent rale is the initial râle of incipient tuberculosis in the great majority of cases

The procedure to elicit the latent râle consequently is of great value in an examination to determine the existence of an early tuberculous implantation

THE TECHNIC OF THE PROCEDURE

It will be unnecessary at this time to discuss the technic of auscultation, the differentiation of the sounds heard, etc, since they are treated of in the excellent textbooks on tuberculosis now available

The patient can be directed to cough at any point in the respiratory cycle, and he can also materially modify at will the intensity, pitch, quality and duration of the cough The interpolation of the cough at any given point in the respiratory cycle is illustrated in Figure 1, in which the upstrokes represent inspiration and the downstrokes expiration

The zenith of the inspiratory phase is indicated at *A*, and represents the point at which the ordinary reflex cough occurs The cough at this point in the respiratory cycle is loud and explosive in character, tending to obscure the presence of adventitious signs, and should be avoided in diagnosis Although latent râles may be elicited in certain cases irrespective of the position of the cough in the respiratory cycle, still in cases presenting only a few localized latent râles, these may be best elicited if the cough is inserted at a point in the expiratory phase corresponding to *B* The supplemental air by this method is greatly depleted after coughing, and a physiologic reaction, that of inspiration, deep and full in character, is immediately initiated This is a desirable feature since a delayed or shallow inspiration after cough may fail in some instances to elicit râles Toward the end of expiration, the mechanism governing cough is also embarrassed, so that the resulting cough is reduced in intensity and hacking in character, excellent qualities for the successful demonstration of râles The insertion of the cough at this point in the respiratory cycle, the point of increased intrathoracic pressure, favors the development of the latent râle, as will later be shown in explaining its origin

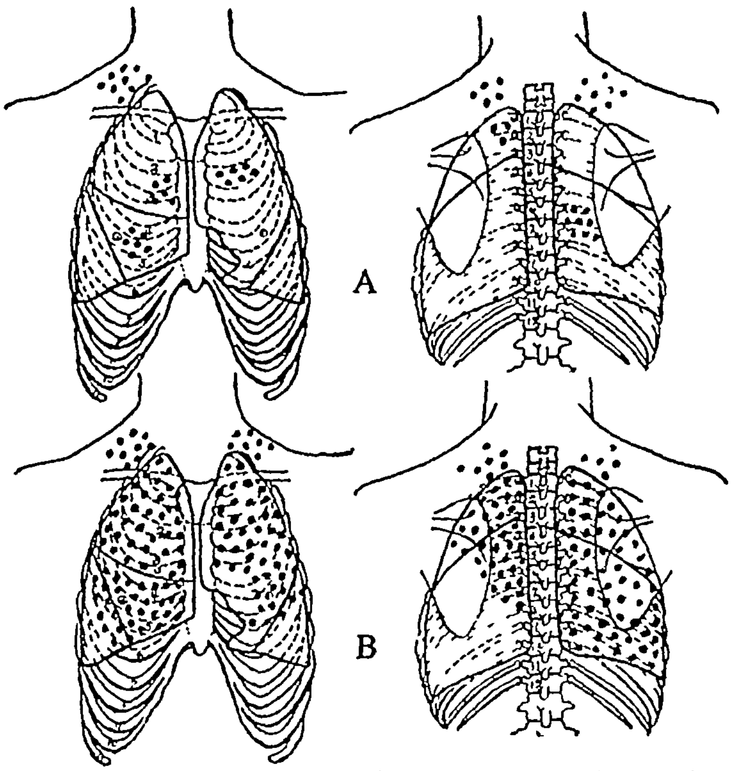

Fig 5—(Case 3114)—Tubercle bacilli present *A* before cough, *B*, after cough, illustrates the definite increase in the rale area that may occur after cough in advanced disease

The view expressed that the value of the diagnostic cough is decreased, if inserted at any point during the inspiratory phase, does not hold true under all circumstances For instance, if the supplemental air be completely depleted by an expiratory effort, cough is no longer possible, since the act of coughing is in itself a phase of expiration In order to cough, the patient must inspire, and if the inspiration corresponds approximately to a point in the respiratory cycle indicated on the chart at *C*, the cough is of equal value diagnostically, as if inserted at *B*, that is, toward the end of expiration In the two instances the conditions under which the cough is produced are similar to one another in all essential respects In certain patients who cannot be taught to deplete the supplemental air sufficiently, the succession cough may be used with advantage It consists of a number of short hacking coughs without an intervening inspiration, indicated on the chart by *X 1*, *X 2*, *X 3*, *X 4* This type of cough is the most satisfactory in depleting the supplemental air, and in some instances may be alone capable of eliciting the latent râle

The prevailing opinion that râles are heard only during the forced inspiration following the cough is not entirely correct, since râles are also heard, in some instances, during the cough and the expiratory phase following it, as indicated by the dotted line on the chart The general lack of recognition of this fact may be ascribed to the present practice of directing the patient to inspire immediately after coughing The expiratory phase following the cough by this method becomes so shortened as not to be appreciable, and the râles produced during expiration are erroneously interpreted as originating during inspiration The determination of this point can be readily established in some instances, if the period after cough and before the succeeding inspiration is prolonged and carefully auscultated for râles

The mechanism involved in the production of the latent râle has not been satisfactorily explained in all details The separation of the collapsed walls of the alveoli and smaller bronchioles of the atelectatic areas present in a tuberculous focus is generally conceded to be the source of the latent râle If the foregoing explanation be accepted, the perplexing question arises as to the possibility of such a separation taking place during the expiratory phase, when, as has been shown, râles do occur Without wishing to assert that the following explanation is the best, I conceive that the mechanism underlying the production of the latent râle is as follows toward the end of expiration, the glottis is voluntarily closed, and the intrapulmonary pressure, by powerful contraction of the expiratory muscles, is increased This sudden increase in the intrapulmonary pressure separates the collapsed walls of the bronchioles and alveoli in the atelectatic area Once the patency of these structures is established, the râle is produced by means of the cough, which sets into vibration the pathologic secretions contained within the bronchioles and alveoli The râles may be heard as previously mentioned, only during the inspiratory phase, or may be heard in some instances during the cough or the expiratory phase *immediately* following it

The procedure cannot be successfully employed in the presence of any condition that prevents an increase in the intrapulmonary pressure, since, as previously mentioned, this is an indispensable requisite in the production of the latent râle Among such conditions are those affections of the larynx which interfere with the normal coaptation of the vocal cords, ulceration, tumor formation, muscle paresis, etc In some instances in which the gap between the cords is marked, the result of ulcerative processes, no additional information is gained by practicing the procedure Fortunately, in such cases the diagnosis is rarely in doubt The procedure should be used with caution in recent hemoptysis Thoracic or abdominal conditions in which pain is aggravated by cough interfere with the method (involvement of the bones or articulations of the thorax, acute pleurisy, intercostal neuralgia and acute inflammatory conditions of the abdomen) Tumors of the mediastinum which encroach on the lumen of the trachea or main bronchi, or marked dyspnea from any cause, are conditions frequently not associated with pain but which may definitely interfere with the technic of the procedure

The salient facts regarding the latent rale may be briefly stated as follows The probable seat of the latent rale is in the atelectatic area of the tuberculous focus A theory of the mechanism underlying its production has been offered, the essential part of which lies in an increase of intrapulmonic pressure, whereby the collapsed walls of the bronchioles and alveoli are separated The optimal point of selection in the respiratory cycle for the diagnostic cough has been indicated, and reasons advanced in support of this selection The statistics presented indicate that a knowledge of the procedure is of importance to the clinician in the diagnosis of incipient pulmonary tuberculosis

CONCLUSIONS

1 The rale is a very constant sign in incipient pulmonary tuberculosis

2 Among the early physical signs, the rale is the one definite sign The others merely represent deviations from the normal, and at most are indefinite

3 The râles are latent in approximately 75 per cent of early cases, and 30 per cent of the moderately advanced

4 Localized apical rales are almost pathognomonic, other conditions that produce them being of rare occurrence

5 The technic of the procedure necessary to elicit the latent rale is not difficult, and can be acquired after a few trials

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THE PROGNOSTIC VALUE OF THE UROCHROMOGEN REACTION IN PULMONARY TUBERCULOSIS

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Having had our interest thoroughly aroused by Dr Schäffle's paper[1] on the comparison between the urochromogen and diazo tests in tuberculosis, and realizing our opportunity of doing some work along the same line, we made these two tests a part of the routine examination of every specimen of urine sent into the laboratory at Cresson State Sanatorium

During the eight months ending Oct 15, 1915, we examined 1,805 specimens from 832 different patients, and the following detailed report is offered in the hope that it may be of interest to others

The simplicity of the urochromogen test and its evident superiority over the diazo should recommend it to all who have charge of tuberculous patients We have followed closely the technic of Weiss as quoted in Dr Schaffle's paper A small amount of fresh, limpid urine, diluted with water to three times its volume is divided into equal portions in two test tubes, to one of which 3 drops of a 1 1,000 solution of potassium permanganate are added The other tube is used as a control

Turbidity and the color of the urine appeared to have no effect on the reaction We have regarded as positive only those in which a distinct canary yellow was produced and was found to be fairly permanent, remaining for from twenty-four to forty-eight hours in specimens kept under ordinary conditions of light and temperature for that particular purpose Occasionally there occurs a faint yellow tinge which soon disappears and may be disregarded

Of the 832 cases in this series, 424 were male and 408 female Classified according to physical condition, 326 were far advanced, 399 moderately advanced and 107 incipient The results are best shown by the accompanying table

RESULTS OF THE TESTS

Positive to both tests	2
Negative to both tests	741
Positive urochromogen with negative diazo	89
	832

Of the ninety-one patients with positive urochromogen reactions, forty-five were male and forty-six female, eighty-six were adults and five children, and seventy-eight far advanced and thirteen moderately advanced For convenience I have grouped these cases according to different conditions as follows

GROUP A

This consists of forty-five patients, forty far advanced and five moderately advanced, who had a positive reaction on their admission to the sanatorium Of these, twenty far advanced, eight male and twelve female, died in from one week to three months In one female patient, moderately advanced the reaction became negative ten days after admission but she died within a month from complicating heart disease and ascites

Twelve patients seven male and five female all far advanced declined steadily and returned home The reaction was still positive on discharge, all were very toxic, having considerable fever and losing weight

One female patient moderately advanced, went home after four months, the condition being much improved The reaction was negative She gained 14 pounds, and the temperature was from 99 to 100 on discharge

Seven female patients four far advanced and three moderately advanced are still in the sanatorium, all negative, all gaining weight two having normal temperature, and the others not above 100 One of them lost 6½ pounds in less than a month, all the while having an evening temperature of from 101 to 103 with a new area of cavity formation, a point which I wish to emphasize After two months the temperature was seldom above 99, the urochromogen reaction was negative, and the patient had regained 5 pounds of the lost weight

Three patients one male and two female all far advanced, are still at the sanatorium, failing rapidly, losing weight, and having evening temperatures of from 100 to 103 and continued positive urochromogen reactions

One male patient, far advanced left the sanatorium within a month and failed to send in a specimen for examination on discharge

GROUP B

This consists of fifteen patients, six male and nine female, who had negative reactions on admission but became positive within two months Fourteen were far advanced and one moderately advanced

Three of these, one male and two female, developed new cavity formation with rapid loss of weight and high fever, and died in less than two months after the first positive urochromogen reaction

Nine patients, four male and five female, failed steadily and went home They all showed loss of weight, beginning within a short period of time before the appearance of the positive reaction In six of these there was a marked increase in the evening temperature even when it had been moderately high before, and in four cases there was a very marked increase in the number of tubercle bacilli in the sputum, the Gaffky scale being used for the purpose of comparison

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[1] Schaffle Karl A Comparison Between the Urochromogen and Diazo Tests in the Prognosis of Tuberculosis The Journal A M A Oct 10 1914, p 1294

Two female patients, far advanced, gave evidence of new cavity formation shortly after the appearance of the positive reaction, with loss of weight and increased fever. Both are now negative, having gained weight and have only slight fever.

The moderately advanced patient also had a negative sputum on admission, but with the positive urochromogen reaction had a positive sputum and a loss of 1½ pounds in weight. Within a month he began to gain weight again, and sputum and urine have remained negative.

GROUP C

This consists of sixteen patients, thirteen male and three female, old residents of the sanatorium who had positive reactions the first time their specimens were sent to the laboratory after these tests were begun. The examinations are made once in two months unless positive for albumin, in which case the urine is examined every two weeks or oftener, according to the condition of the patient. Thirteen of these cases were far advanced, and three moderately advanced.

Six male patients, far advanced, died within from one week to three months. One moderately advanced male patient became despondent over his condition and committed suicide.

Two far advanced male patients and one moderately advanced female went home within two months after their first positive reaction. All had made slight gains in weight, and the general condition was somewhat improved. The reaction was negative on discharge.

One male and two female patients, all far advanced, went home, steadily declining and with reaction positive on discharge. The deaths of the two female patients have been reported.

Three male patients, two far advanced and one moderately advanced, are still in the sanatorium, failing rapidly, and have positive urochromogen reactions.

GROUP D

This consists of fifteen patients, nine male and six female, old residents of the sanatorium who were negative at the first time their specimens were examined but became positive at some time later. Eleven were far advanced, and four moderately advanced.

Six far advanced, three male and three female, died, one in six months and the others in less than three months after the first positive reaction.

One male patient, moderately advanced, developed tuberculous meningitis. The positive reaction appeared three days before his death.

Three male patients, two far advanced and one moderately advanced, are still in the sanatorium, all on the decline and having positive reactions.

One male and one female patient, both far advanced, went home failing, losing weight and having high irregular temperature. Both had positive reactions on discharge and both are reported dead.

One female patient, far advanced, is still in the sanatorium, negative, has gained several pounds in weight, and is having only moderate fever.

Two moderately advanced patients, one male and one female, went home. The male patient had a negative reaction, but a suspicious area of softening in the left upper lobe, and was losing weight steadily. His only positive reaction was eleven days previous to the negative discharge specimen. The female patient had been in the sanatorium six months and had gained 25 pounds. Ten days before her departure she began to have a higher temperature but did not lose weight. Her discharge specimen was positive.

Two of the cases in this group were especially interesting. The first, an adult female patient, far advanced, had a severe hemorrhage in February which was followed by the expectoration of small amounts of fresh blood every day for two weeks. The urine was examined repeatedly during the next month, but was always negative, and hence the examinations were discontinued. The patient lost weight steadily, and had a continued moderately high evening temperature. A strongly positive reaction was present at the middle of May, two months after the last negative reaction, and the patient died suddenly, one week later.

The second was a girl, aged 12, far advanced, with cavity formation in both upper lobes and a marked cervical adenitis. The temperature was normal, the sputum positive and the urochromogen reaction negative in February. The patient was able to be up and about with the other children until the middle of April, when she became acutely ill. The temperature was from 101 to 102, there was rapid loss of weight with extension of lung involvement, the sputum was negative, the urochromogen reaction positive, and the enlarged cervical glands rapidly diminished in size. It did not seem possible that she could live more than a few days. Two weeks later, however, she was considerably improved, but still unable to be weighed. The temperature was lower, the glands enlarging again, and the sputum and urochromogen reaction negative.

June 10, after the patient had gained several pounds, it was noticed that she was once more losing weight and having an evening temperature of from 101 to 103. Examination revealed extended cavity formation with sputum and the urochromogen reaction positive. From then on she failed steadily and died in September, five months after the first positive reaction.

OTHER CASES

During the eight months there were twenty-six other deaths than those previously mentioned, and I have looked over their charts in order to find in what respects they differed from those who had positive reactions. All were far advanced.

Two, who had been gaining slowly since their admission, and whose examinations had been negative, had sudden, large hemorrhages and died within a few minutes.

One developed a pneumothorax a month after admission and died two weeks later. There was a negative reaction one week before death.

Two, who had only slight activity, though far advanced, died of nephritis. Both were negative on several examinations, the last being within twenty-four hours of the deaths.

One patient died fifteen days after a severe hemorrhage. The urine was not examined.

One died eighteen days after admission. The reaction was negative when the patient was admitted, and the patient was not reexamined.

Two died from heart disease. These patients had repeated negative reactions till within three or four days before death.

One died four months after having a severe hemorrhage. This patient had two negative examinations, the last one five days before death.

Two were negative five weeks before death and were not reexamined.

Fourteen had not had these tests at all, owing to the fact that their specimens had not become due at the laboratory according to our schedule, and we were not then familiar with the conditions which we now consider as indicating a special examination, namely, loss of weight and increased activity. At present we examine all positive and even suspected cases at least once a week.

COMMENT

Our failure to find more positive diazo reactions was due, I think, to an error in our method of doing the test, an error which has been corrected in our later work but which unfortunately has rendered the present series of cases unavailable for accurate comparison. The method which we used at first was to add "a few drops" of the sodium nitrite solution to the mixed urine and sulphanilic hydrochloric solution, and that indefinite "few drops" was the cause of our downfall. On looking into the matter a little more closely I found in different books four different methods of performing the test, and the four varied in the amount of sodium nitrite solution used as well as the amount and manner of adding the ammonia I give here the method which we found to give the best results and which we are now using in all cases

Solution 1

Sulphanic acid	1 gm
Strong hydrochloric acid	50 c c
Water	1,000 c.c

Solution 2

Sodium nitrite	1 gm
Water	200 c c

These solutions are kept separate in tightly stoppered, dark colored bottles For use, 5 c c urine and 5 c c Solution 1 are mixed in a test tube 2 drops of Solution 2 added, and the mixture shaken until frothy Then with a pipet having a rubber bulb, 1 c c ammonia is quickly added The result, if positive, is a cherry red color in the body of the tube, while the foam assumes a lighter shade but is still reddish

We do not mix Solutions 1 and 2 in a stock bottle on account of its rapid deterioration We have found that one drop of Solution 2 in a known positive urine occasionally does produce the characteristic color, that 2 drops never failed, but 3 drops sometimes and 4 drops always spoiled the reaction Similarly we found that adding the ammonia drop by drop till the mixture was alkaline did not produce the desired result The ammonia must be in excess and added quickly According to Wood's "Chemical Diagnosis," the administration of opium derivatives will inhibit the diazo reaction, and this has to be taken into consideration, for many of our patients with positive urochromogen have required such medication

The administration of such drugs, however, does not appear to have any effect on the urochromogen reaction Neither does it seem to be influenced by the diet of the patient Filtering the urine makes no difference, nor does boiling The latter fact led us to try the biuret test for peptone, with negative results

Specimens from the same patient at different times of the day showed no variation in the reaction At one time some quite marked differences in the intensity of the reaction led to an investigation of our permanganate solution which was found to have deteriorated and become unfit for use Since then we have kept it in a dark colored bottle, made new solution once a month, and have had no more doubtful reactions

None of the positive specimens were alkaline when examined When rendered so by the addition of normal sodium hydroxid solution there was no apparent difference until the sodium hydroxid had been added to excess Then the characteristic yellow failed to develop on addition of the permanganate solution, but was replaced by a dark blue which quickly disappeared

Along with the positive urochromogen we have found a very excessive indican reaction

From the physical findings in these reported cases my conclusions are that the positive reaction in patients with pulmonary tuberculosis is present only when there is an actual destructive process going on Occurring in an ambulant case we would regard it as a warning that the patient should be put at absolute rest in bed In the moderately advanced case, we may expect soon to find evidence of cavity formation if the reaction remains positive For the already far advanced case with cavity riddled lungs it is of grave significance In 93 per cent of our cases of this type the patients died within four months, and the majority of these within three months

On the other hand, a continued negative reaction in a urine that previously has been positive appears to indicate at least a temporary cessation or retardation of activity

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A STUDY OF THE ETIOLOGY OF CHRONIC NEPHRITIS

AND OF THE EFFICIENCY OF THE PHENOLSULPHONEPHTHALEIN TEST *

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We have been much impressed with the frequency of chronic kidney conditions in patients admitted to the hospital for other ailments, and with the varying etiologic factors which their histories suggest as possible causes for the condition

A systematic study of all such cases for two years past has thrown some light on the questions of etiology and classification, and has led us to some conclusions as regards tests of kidney efficiency and methods of treatment We shall present the facts as we find them, and summarize our own conclusions Further and different deductions may suggest themselves to others, but it must not be forgotten that medicine is not a mathematically accurate science, and a statistical study cannot always give full account of the reasons for classification in many cases Doubtful cases have been thrown out, or accounted for in a separate group so as not to disturb our main point unnecessarily

There were upward of 7,000 admissions to the hospital in the two years of our observation, practically all males between 20 and 60 years of age

Among them the initial urine examinations showed that 594 patients had albumin and casts, although only thirty-eight of them were admitted as cases of nephritis —thirty-four with the diagnosis of chronic interstitial, and four with the diagnosis of acute nephritis

It seemed wise to adopt at once certain arbitrary lines and to classify the cases accordingly We therefore divided these 594 cases into two groups those in whom the blood pressure, in absence of any other obvious cause, was above the maximum normal while at rest in bed on ordinary hospital diet, and those in whom it was normal or below

Each group was studied in reference to entrance diagnosis, complications, age, occupation, use of alcohol, and previous infections, subdivided into (1) venereal, (2) ordinary diseases of childhood, including mumps, measles, whooping cough and chickenpox, (3) scarlet fever, diphtheria, pneumonia, rheumatism and tonsillitis, which were grouped together as the more serious infections, and (4) a separate group comprising all others, typhoid, malaria, etc, which are referred to as other infections

The cases with a blood pressure above 180 were separated out from the cases with high blood pressure It was not possible to distinguish in all high blood pressure cases between chronic interstitial nephritis and arteriosclerotic kidney, but for the main purposes of this paper such a distinction is not necessary, and

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* From the records of the Southern Pacific Hospital

they will all be referred to as chronic interstitial nephritis

Table 1 shows the cases according to this classification, the first group being those with blood pressure above normal, and the second those in which it was normal or below normal It is obvious at once that the diagnosis of nephritis is practically always a laboratory diagnosis, that it exists as a complication undiscovered until some other condition brings the patient to the hospital We are not arguing that it was not the primary condition or was not the cause of the respiratory or cardiovascular break that brought some of the patients to the hospital, but it certainly was not the appreciated condition that governed the patient's action in reporting to the company's physician, nor was it the tentative or admission diagnosis suspected in a large proportion of the cases in which it existed

The second very important thing is that the etiologic significance of infections, hard work and alcohol bears a very similar relation both to the group in which albumin and casts were accompanied by low blood pressure, and to the group in which they were accompanied by high blood pressure The chief difference in the two groups lies in the fact that in the high blood pressure cases three fourths were over 40 years of age, whereas in the normal or low blood pressure group less than one third were above the age of 40 In other words, the incidence of marked permanent structural change in the kidney bears a very distinct relation to age This is further shown by the fact that in the control group the age on entrance was under 40 in 68 per cent of the cases, in the group showing kidney disturbance with normal pressure 66 per cent were under 40, while in the high pressure nephritics only 24 per cent were under 40 Whether or not the normal pressure cases are on their way to early permanent change, we cannot say, but the fact that both groups show that venereal disease and infection from the scarlet fever group were nearly two times more frequent than in normal kidney cases makes the supposition reasonable that the signs of kidney irritation in the low pressure group portend a likelihood of future kidney insult and change not evidenced by the control group

The significance of previous infections in relation to kidney disease and kidney susceptibility can be established only by an investigation into the frequency of such infections in a similar number of cases admitted to the hospital *showing no signs of* kidney disturbance If the incidence of alcohol, venereal infections and other serious infections proves to be equally frequent and important in cases showing no signs of kidney disturbance *on entrance*, it is obvious that we must look further in the study of causes of kidney disease A tabulation of 594 cases was made to show this point (Tables 2 and 3)

Table 2 shows the etiologic factors in 336 cases of high blood pressure, *albumin and* casts in the urine, and 336 cases with normal blood pressure, and no sign of kidney lesions Table 3 shows the etiologic factors in 258 cases with normal blood pressure, albumin and casts in the urine, and 258 cases with normal blood pressure, and no sign of kidney lesions The kidney disturbance and nephritic cases are arranged in parallel columns with the normal controls

It will be seen at once that certain of the infectious diseases, notably the venereal and scarlet fever groups, were from 20 to 300 per cent commoner in the early history of chronic nephritic cases than in the nonnephritic cases The influence of alcohol is somewhat less than might be supposed, while it was commoner as a possible etiologic factor than any other condition among the nephritics, it was also the commonest factor *in the control group* The fact is evident, however, that in the nephritic and non-nephritic kidney conditions, alcohol was used in from 16 to 25 per cent more cases than in the control group It is even important

TABLE 1—CLASSIFICATION OF CASES

Cases	Blood Pressure Above Normal											Blood Pressure Normal or Below Normal	
			Age		Occupation					Blood Pressure			
	Nonnephritic Control Cases	Total Nephritic Cases	Under 40	Over 40	Enginemen	Trainmen	Laborers	Mechanics	Sedentary	140 to 170	180 plus	Nonnephritic Control Cases	Total Nephritic Cases
Surgical													
Infected wounds	28	14	4	10		4	3	7		14		26	17
Noninfected wounds	37	23	6	17	1	1	9	7	4	19	4	33	8
Fractures	26	18	6	12	2		8	6	2	15	3	12	16
Appendix	19	12	6	6		1	7	2	2	10	2	17	12
Gastro intestinal	16	22	3	19	1	6	5	4	5	19	3	14	6
Gallbladder	2	5	2	3			2	1	2	5		2	5
Alveolar abscess	0	4	3	1		1	2		1	4			10
Medical													
Acute infections	61	28	12	16	3	2	8	8	7	24	4	45	71
Cardiovascular	0	45	5	40	7	2	10	6	18	26	19	4	12
Respiratory	41	26	3	23	1	5	8	4	8	19	7	33	33
Gastro intestinal	10	21	6	15		3	13	2	3	15	6	9	14
Nervous and mental	13	21	4	17	1	3	10	5	1	14	7	8	10
Genito urinary	32	17	2	15	3	1	7	5	1	16	1	27	10
Nephritis	0	34	9	25	8	4	7	8	12	15	18		4
Other conditions	36	46	11	35	7	2	20	9	7	36	8	28	30
Unrecorded										3*			
Blood pressure above normal													
Totals		336	82	254	29	35	128	74	73	254	82		
Normal controls	336		226	110	23	41	128	65	79				
Blood pressure below normal													
Totals			173	82	13	34	95	68	54				258
Normal controls			179	79	20	29	95	49	65			258	

* Below normal

that of the cases giving no history whatever of any etiologic factor, there were twenty-nine from nephritics and sixty-eight from the controls, thirty-eight from the non-nephritic kidney condition in comparison with forty-five from the control group

A previous history of some diseases other than the minor children's ailments was about twice as common in the nephritics A comparison of the cases showing kidney signs without high blood pressure with an equal number of cases with no sign of kidney disturbance gave the results shown in Table 3

We have presumed its relation to kidney disease manifesting itself late in life even where no history of its direct consequence to the scarlet fever was shown or known From the results given in Table 3 it certainly seems reasonable to suppose that the kidney, once the seat of trouble manifested by the presence of albumin, casts, red blood cells, etc, in the urine, is likely to be the seat of trouble again under conditions to which the normal kidney is more resistant

In following the urine sediments of cases in which streptococcus infection was known to exist, especially in the throat, we have been surprised to find streptococci in the urine with very little evidence of kidney disturbance often enough to warrant us in believing that the beginning of many serious kidney disturbances are insidious, and patients are discharged cured of their primary trouble and yet harboring conditions in the urine which must inevitably lead to permanent kidney diseases One such case in a doctor following acute streptococcus tonsillitis was accompanied by changes so slight as to have been easily overlooked had we not had this very problem under investigation, and yet three months' careful treatment by rest, milk diet and hexamethylenamin intermittently was necessary before the organisms finally disappeared

TABLE 2—ETIOLOGIC FACTORS IN 336 CASES OF HIGH BLOOD PRESSURE ALBUMIN AND CASTS AND 330 CASES WITH NORMAL PRESSURE AND NO KIDNEY LESIONS

Possible Etiologic factors	Venereal		Alcohol		Scarlet Fever Group		Usual Diseases of Childhood		Other Infections		No History of Any Disease	
	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal
Alone	9	[illegible]	[illegible]	[illegible]	5	0	17	46	11	11	19	68
With usual diseases of childhood	7	4	[illegible]	[illegible]	4	17						
With alcohol	4	6			4							
With other infections	2	1		5	5	1	18	23				
With scarlet fever group	2	[illegible]		2								
With alcohol and usual diseases	22	13			11							
With usual diseases and other infections	8	6	[illegible]	13	14	6						
With usual diseases and scarlet fever group	2	2	15	9								
With alcohol and other infections	10	6										
With scarlet fever group and alcohol	25	8		1								
With scarlet fever group and other infections	2	2		3		1	30					
	93	[illegible]	[illegible]	103	43	0	65	69	11	11	19	68
Scarlet fever group and all other conditions	89	50										
Alcohol and all other conditions	108	[illegible]										

TABLE 3—ETIOLOGIC FACTORS IN 258 CASES WITH NORMAL BLOOD PRESSURE ALBUMIN AND CASTS AND 258 CASES WITH NORMAL PRESSURE AND NO KIDNEY LESIONS

Possible Etiologic Factors	Venereal		Alcohol		Scarlet Fever Group		Usual Diseases of Childhood		Other Infections		No History of Any Disease	
	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal
Alone	7	3	10	24	8	8	31	37	6	9	38	45
With usual diseases of childhood	11	3	10	22	4	12						
With alcohol	6	4										
With other infections	2	1	8	3		1	14	22				
With scarlet fever group	2	1	2									
With alcohol and usual diseases	24	9										
With usual diseases and other infections	6	6		18	4	5						
With usual diseases and scarlet fever group	4	1		5								
With alcohol and other infections	8	6										
With scarlet fever group and alcohol	12	9										
With scarlet fever group and other infections	1		22	3		1						
	86	43	67	75	16	27	45	59	6	9	38	45
Scarlet fever group and all other conditions	59	46										
Alcohol and all other conditions	117	103										

As indicated earlier, the frequency of venereal disease was eighty-six in the group of 258 with kidney disturbance, whereas only forty-five among the controls had had venereal disease Venereal infections among the scarlet fever group were 20 per cent larger than among the controls, and the alcoholics were 15 per cent more numerous

It seems fair to conclude that a case is made out for the definite bearing of venereal infections and the more serious infections (chiefly streptococcus and pneumococcus) as well as of alcohol on the occurrence of advanced kidney disease

We have all understood the relation of scarlet fever to immediately consequent and uncured kidney disease

In considering the influence of occupation it was ascertained that the 40,000 employees of the company were grossly divided as indicated in Table 4

Here one finds a remarkable evenness in the figures, and nothing is shown quite so conclusively as that the 16 per cent of sedentary employees suffer more than all the others both in regard to kidney disease and to all the other conditions requiring medical attention Engineers and firemen were admitted with nephritis in nearly 25 per cent greater frequency than in proportion both to the number employed and their admissions for other causes Whether or not the lack of exercise of the clerks and the same cause combined possibly with exposure is the cause of this condition with engineers can only be surmised

Exhaustive work has been done to measure renal function in bilateral and unilateral disease by various urinary examinations Cryoscopy and electric conductivity have been studied but are not practicable Sodium chlorid and urea estimations have been carried out, especially in unilateral kidney disease The hydrogen ion concentration of the urine has also offered a field for study, and has been studied, among others, by Palmer and Henderson The diastase test has also been used, and has been favorably reported on by Wohlgemuth, von Beuzer, Heruta, Wynhausen, Marino, Rosenthal and Geyelin

TABLE 4—INFLUENCE OF OCCUPATION

Occupation	Employees in Various Departments, Per Cent	336 Admissions with Nephritis, Per Cent	336 Non nephritic Controls Per Cent
Engineers and firemen	6 8	8 8	6 8
Conductors and brakemen	10	10 6	12 2
Laborers	40 4	36	38 1
Mechanics	26 4	22 3	19 4
Sedentary (office force)	16 4	22 3	23 5

Lactose and potassium iodid have also been employed to determine renal function, but they do not appear satisfactory, and the same may be said of phlorizin, which produces a glucosuria when injected subcutaneously, the degree of which is the essential end-result

Various substances have been subcutaneously, intramuscularly or intravenously injected to test for the rapidity of excretion and the amount based on colorimetric urinary estimations Among these are methylene blue, rosanilin, indigocarmin and phenolsulphonephthalein Methylene blue has been found painful, and is slowly eliminated Rosanilin has had only a limited use, and does not appear satisfactory Indigocarmin, in the hands of a few, notably Voelker and Joseph, Baetzner, Ehrick, Roth, Tanaka and Thomas, has given the most satisfactory results of all the kidney functionation tests Phenolsulphonephthalein has been most exhaustively studied clinically and experimentally, and the majority of the investigators have reported most favorably as to its value Many have made comparative studies of two or more of the above-mentioned substances Phenolsulphonephthalein was introduced for renal functionation determinations by Rowntree and Geraghty[1] in 1909 Among the more recent investigators of phenolsulphonephthalein are Rowntree, Marshall and Baetjer,[2] and Geraghty,[3] who emphasize its value in nephritis and other renal disorders Thayer and Snowden[4] reported that the degree of its excretion coincided with necropsy findings Hess[5] concluded that the phenolsulphonephthalein surpasses all other methods by its simplicity, and that it is of value prognostically as well as diagnostically Pazzana,[6] who studied only a small number of cases, endorses this method Fanz[7] has satisfactorily employed this test, and recommends that the standard color solution should be made up in part of the patient s urine obtained before inoculation of the phenolsulphonephthalein Braasch and Thomas[8] consider that fundamental surgical principles and clinical data are most important, but that the excretion test aids in differential diagnosis It has only a limited value prognostically Smith[9] found the test to parallel with great constancy the pathologic condition of the kidneys Intravenous administration was carried out in some cases Siegel[10] has reported on its value diagnostically and prognostically in all types of nephritis and in surgical kidneys Recently studies have been made, and their value emphasized, on the blood nitrogen retention in renal disorders Frothingham[11] believes that the blood pressure estimation, repeated routine urinary examinations and the excretion of sodium chlorid are the most reliable diagnostic methods For diagnosis, the most useful examinations are for nonprotein nitrogen in the blood, to determine the ability of the kidneys to excrete extra nitrogen in the urine and phenolsulphonephthalein

Hohlweg[12] has favorably reported on the examination of blood for residual nitrogen Quinby and Fitz[13] have employed Prussian blue intravenously as well as indigocarmin and phenolsulphonephthalein Urines were examined for total chlorids, nitrogen, diastase and hydrogen ionization They used dogs with experimentally produced unilateral nephritis They conclude that phenolsulphonephthalein and nitrogen excretion are the most useful tests Austin and Eisenbrey,[14] studying experimental nephritis in dogs, found that the anatomic appearance of the kidneys bore no definite relation to nitrogen, chlorid, or phenolsulphonephthalein eliminations They concluded that phenolsulphonephthalein elimination seemed to be a better indicator of kidney excretion than either the anatomic changes or the elimination of total nitrogen or chlorids

PERSONAL OBSERVATIONS

Following the technic as described by Rowntree and Geraghty, sixty-seven patients were studied with the phenolsulphonephthalein test, and seventy-five injections were made It is unfortunate that many of the patients received only one injection General medicine and surgical conditions were represented, and most of the cases showed albuminuria Of the sixty-seven patients, thirty-six (50 per cent) were nephritics, one with acute parenchymatous nephritis, thirteen with chronic parenchymatous and twenty-two with chronic interstitial nephritis Of the non-nephritic group, the average excretion for two hours was 51 1 per cent The lowest was 35 per cent in a case of lumbosacral myalgia and no demonstrable signs of nephritis Two cases of neurasthenia showed 35 per cent The highest percentage was seventy-seven in a case of cholelithiasis The case of acute parenchymatous nephritis was a resolving one with a systolic blood pressure of 152 mm and a phenolsulphonephthalein output of 56 per cent

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[1] Rowntree and Geraghty Jour Pharmacol and Exper Therap, 1910, i, 579

[2] Rowntree, L G, Marshall, E K, Jr, and Baetjer, W A Further Studies of Renal Function in Renal, Cardiorenal and Cardiac Diseases, Arch Int Med, April, 1915, p 543

[3] Geraghty Bull Johns Hopkins Hosp, 1915, xxvi, No 291, p 155

[4] Thayer and Snowden Am Jour Med Sc, 1914, cxlviii, No 6, p 781

[5] Hess Bull Johns Hopkins Hosp, 1915, xxvi, No 288, p 52

[6] Pazzana Brazil med, 1915, xxix

[7] Fanz New York Med Jour, Dec 19, 1914

[8] Braasch, W F, and Thomas, G J The Practical Value of Chemical Tests of Renal Function in Surgical Conditions of the Urinary Tract, The Journal A M A, Jan 9, 1915, p 104

[9] Smith G G Separate Renal Function, The Journal A M A, Jan 16, 1915 p 223

[10] Siegel Publ Jefferson Med Coll and Hosp 1915, vi, 78

[11] Frothingham Am Jour Med Sc, 1915, cxlix, No 6, p 808

[12] Hohlweg Med Klin, 1915, xi, No 12

[13] Quinby, W C, and Fitz, R Observations on Renal Function in Acute Experimental Unilateral Nephritis, Arch Int. Med, February, 1915, p 303

[14] Austin and Eisenbrey Jour Exper Med, 1911, xiv, 366

In one case of chronic parenchymatous nephritis the Edebohl's operation was performed The phenolsulphonephthalein output of 10 per cent before the operation rose afterward, with marked clinical improvement to 32 per cent within two weeks and to 52 per cent three months afterward Within six weeks therefrom, owing apparently to indiscretion in diet and undue physical exercise, *uremia developed* The youngest patient in this group was 18 years old and gave the lowest output, 14 per cent Her condition was that of impending uremia She left the hospital, and was unfortunately lost sight of Except one, all of the remaining patients with parenchymatous nephritis were in fair physical condition, showed an average systolic blood pressure of 150 mm , and gave an average output of phenolsulphonephthalein of from 35 to 40 per cent One case only showed an excretion (65 per cent) that did not parallel the severe cardiorenal condition (systolic blood pressure, 80 mm)

Of the cases of chronic interstitial nephritis, all but one showed a parallelism of phenolsulphonephthalein output and clinical symptoms This patient, who had hepatic cirrhosis, a few days after admission excreted only 12 per cent After two months he had somewhat improved, and the excretion was 35 per cent The lowest percentage obtained in any case was 7 5 The patient died the following day of uremia

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ANALGESIA AND ANESTHESIA IN OBSTETRIC PRACTICE

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For two or three years the attention of obstetricians in this country has been rather sharply called to methods of relieving the pain of labor Various means to this end have been presented and in turn sharply criticized Successive reports of work along this line have begun to clarify our ideas Early enthusiasm has been modified by a longer experience We are, however, far from adopting uniformly any one procedure as best Here, as in every field of medical therapeutics, no fixed plan can govern every case, but the patient will continue to expect, and should be given, discriminating judgment as to the needs of her individual case No rule of procedure should guide us, but rather judgment of our patient's condition and temperament, together with accurate knowledge of the drugs we are employing, their indications, contraindications and therapeutic effects should form the basis of our procedure

In the summer of 1914 I began giving this matter special attention In November, 1914, we used nitrous oxid and oxygen for the first time as a labor analgesic at St Luke's Since that time we have developed our plan of procedure, as experience or theoretical considerations pointed the way

Previous to using gas as an analgesic in labor we had for some time been employing it as the anesthetic of choice, in operative work in all eclampsia and all other toxemia cases, and for various minor operative obstetric procedures in which unconsciousness rather than relaxation was to be desired

Since that date we have employed gas to relieve the pain of labor in seventy-two cases In some of these, only gas was used In many of them morphin was employed, in quite a few ether, and in a few scopolamin But in all of the seventy-two cases, gas was the mainstay, and the other drugs were used as adjuvants, or to meet special indications

In most of our cases the gas has been administered by the same anesthetist, Dr Cornelia Stoeltzing, and to the gradually increasing knowledge of its use, based on this experience, is to be ascribed much of the satisfaction which we have had with the method Ability to get results with gas analgesia depends to a considerable degree on the knowledge gained by experience Any one desiring to employ nitrous oxid and oxygen in labor should first master the method himself and should so far as possible give his anesthetizer time to acquire technical skill

In this article I wish to present no detailed account of cases, but to describe our present practice, with a brief statement of the reasons therefor, and the results obtained I shall consider three agents, morphin, gas and ether, as the various modifications of their use cover the entire field of our present technic Our use of these drugs is based on our belief in the accuracy of propositions which may be outlined thus

PRINCIPAL THEORETICAL CONSIDERATIONS

MORPHIN

1. Relieves pain
2. Relaxes a rigid cervix
3. Interferes with labor pains frequently if given too early
4. Delays labor if given in cases of true primary uterine inertia
5. Hastens labor if given in cases in which a hypersensitive os is delaying the first stage
6. Depresses the child's respiratory center, for a period varying from two to four hours after administering to the mother
7. By its sedative effect on the nervous system, diminishes the maternal exhaustion due to long continued first stage pains
8. Is eliminated slowly

NITROUS OXID AND OXYGEN

1. Probably retards first stage pains
2. Does not retard second stage pains
3. Hastens the second stage of labor, by removing the inhibition of voluntary effort caused by pain
4. Causes no cyanosis of the mother when properly administered
5. Has no deleterious effect on the baby's respiratory centers
6. Is eliminated very rapidly
7. Does not cause muscular relaxation
8. Does not relax the perineum and pelvic floor, and hence does not aid in the prevention of laceration of a rigid perineum as well as *ether*
9. Exerts no known deleterious effect on the liver or kidneys
10. May be used over a long period of time that is, four five or six hours, with safety

ETHER:

1 Causes relaxation of both voluntary and involuntary musculature
2 Occupies an intermediate position between morphin and gas on the baby's respiratory apparatus
3 Is not desirable as an analgesic over so long a period as gas
4 Is more slowly eliminated than gas
5 If used in any quantity produces nausea and some vomiting
6 Irritates the mother's respiratory apparatus as well as her kidneys
7 Produces less prompt analgesia than gas

NORMAL CASES

In labors not distinctly abnormal, morphin is used during the first stage, and only when the labor is expected to last at least four hours longer Nature makes a determined effort to stimulate the infant's heretofore unused medullary respiratory centers to vigorous action at the moment of birth The normal stimulus of this center is the increase of carbon dioxid in the blood This has been secured by the interference with the oxygen supply through the placenta, by means of the vigorous and prolonged uterine contractions of the terminal moments of the perineal stage Attempts at respiration are also stimulated by the reflex effect of cold air striking the baby's skin Both phases of Nature's plan for securing vigorous respiration at birth are interfered with if the baby's nervous system is under the influence of morphin at this particular time So long as the child is in the uterus the effect of reasonable amounts of morphin is negligible because its oxygen supply at this time is dependent on its placental-fetal circulation secured by its heart Respiratory depressants in the fetal circulation at the moment of birth inevitably produce apnea

Our indications for morphin during the first stage are

(1) A rigid, hypersensitive os

(2) Evidence of considerable pain with a probable first stage of several hours, as in most primiparas

(3) The presence of nagging but ineffectual pains which irritate and exhaust the patient out of proportion to results

Accordingly many of our patients particularly if primiparas, get a single hypodermic of one-sixth grain of morphin If it is desired to stop nagging pains and produce sleep, one-quarter grain is given Patients in whom ineffective uterine action, that is, true primary uterine inertia, seems to be the cause of the delay are not given morphin

At the beginning of the second stage, or if the patient suffers severely, shortly before dilatation is completed, the use of gas is begun We begin with intermittent administration, that is, during the pain only, and with small amounts, as 30 gallons of nitrous oxid to 15 gallons of oxygen As the head approaches the pelvic floor and finally strikes the perineum, the nitrous oxid is gradually increased in volume to 50 or 60 gallons, and the intervals between administrations are shortened This gradual increase of the volume of the gas given is controlled by the patient's statement of pain or comfort during uterine contraction As the perineum begins distending and the most painful stage of labor arrives, the gas is given still more continuously, until at the time of crowning, from 70 to 80 gallons of nitrous oxid are given practically continuously When the head is born, the nitrous oxid is at once discontinued, and the patient sharply revived by a few inhalations of pure oxygen

If the woman is a primipara with a rigid, inelastic perineum, and lacerations seem inevitable, we secure the utmost possible relaxation by switching to ether, and pushing to complete unconsciousness at the moment the head crowns the perineum

All this requires perfect team work between the obstetrician and the anesthetist, who must be able to anticipate the operator's every move Anything short of this fails to produce the perfect satisfaction of which this method is capable The basic principle of its administration is to give sufficient nitrous oxid to secure relative freedom from pain, and add sufficient oxygen to prevent any cyanosis Consciousness, freedom from pain, and good color may all be secured by proper technic

Analgesia permits careful repair of all injuries except those of the cervix If cervical repair must be undertaken, it is best to have the patient under anesthesia The ease with which all these various demands of the operator may be met by the anesthetist constitutes one of the chief advantages of gas in labor

ABNORMAL CASES

When merely making a test of labor preliminary to cesarean section, we administer no anesthetic If satisfied that natural forces can engage the head and bring it into the pelvic cavity, we use gas freely from the beginning of the second stage, reinforcing the uterine contractions by hypodermic of pituitary extract, giving half an ampule and repeating as the effect wears away

Under these circumstances we have had some brilliant results, the active cooperation of the patient over a considerable period, made possible by her relative freedom from pain in the presence of vigorous uterine contractions, being highly satisfactory

Several babies have been secured in this way, in cases in which we desired to avoid abdominal section on account of the risk of previous contamination Of course this requires that the obstetrician should be reasonably sure of his diagnosis, and be equipped for major work, if this becomes necessary I do not mean to minimize the risk of careless or incompetent use of pituitary extract

When forceps are to be used, gas analgesia is merely increased to complete anesthesia, at the perineal stage ether vapor is added to secure the utmost relaxation in order to avoid laceration

Webster[1] mentions version as one of the conditions for which he employs gas I disagree with him in regard to this, believing that the relaxation required for this procedure renders ether by far the better anesthetic for this purpose

When doing abdominal section for the usual indication, disproportion, ether is our choice of anesthetic because of the greater ease of manipulation under it When in addition these cases are severely toxic, we use gas with the addition of ether vapor for relaxation as required

For all minor obstetric procedures, cervical dilatation preliminary to introducing bags, curetting for retained secundines in miscarriage, etc, gas is given the preference

CONCLUSION

I wish to enter a vigorous protest against the advice at present being so freely given that any one may use gas in labor cases with perfect safety Gas is a powerful therapeutic agent with infinite possibilities for harm at the hands of incompetent or careless users The statement has been made and is, I believe accepted, that gas in the hands of an expert is a safe anesthetic, but *the most dangerous* anesthetic if given by a novice Of course this is far too strong a statement to make concerning analgesia Even here, however, some knowledge and experience are necessary to secure both safety and satisfaction from its use Moreover, the temptation to follow a gas analgesia labor with a gas anesthesia for repair is so obvious that I would earnestly urge all those expecting to adopt this method to spend sufficient time in special study of the agents he is to use, so that he can direct its administration This does not mean that a doctor must equip himself as a gas expert The skill necessary for its use in labor can be acquired in a short time but free use of gas by the absolutely inexperienced will surely lead to tragedies

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[1] Webster, J C Nitrous Oxid Gas Analgesia in Obstetrics, The Journal A M A, March 6, 1915, p 812

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NOTES ON NITROUS OXID ADMINISTRATION

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Even with the accumulated knowledge gained from several years' experience in the prolonged administration of nitrous oxid (and oxygen), there is still quite a tendency by some to disregard essential elements of safety, especially when nitrous oxid, administered with normal oxygenation, does not furnish a sufficient depth of anesthesia Increasing the percentage, and therefore the amount, of nitrous oxid inhaled of course deepens the anesthesia, and this is often a great desideratum but the increase in the depth of anesthesia thus gained simultaneously decreases the oxygenation, and herein lurks the danger Most patients can tolerate a decreased oxygenation for a short time, and when one has had experience with this class of patients, the anesthetist thereby becomes emboldened to minimize the danger arising from subnormal oxygenation Sooner or later, a patient who cannot tolerate even temporarily a decreased oxygenation reaches the service of such an anesthetist, and serious results sometimes follow very quickly It cannot be stated too frequently or too emphatically that with an anesthetic, cyanosis is a danger signal that should not be disregarded

If the prolonged administration of nitrous oxid is to be confined to the cases in which it may properly be used as the sole anesthetic, its use is quite limited, and in many clinics its field is thus restricted, straight ether being the usual anesthetic As ether and nitrous oxid are synergistic in anesthetic action, it is not necessary thus to restrict the use of nitrous oxid Aside from the use of alkaloidal adjuvants, the safe way to increase the depth of anesthesia under nitrous oxid is by the addition of ether, small amounts usually being sufficient But even when a considerable amount of adjuvant ether is required to secure the desired depth of anesthesia, the amount of adjuvant ether is considerably less than would have been the amount of straight ether required That is, when nitrous oxid is administered throughout, it reduces the amount of ether required, and in this way reduces the toxication of the anesthesia to a minimum

The toxication of a substance is not in direct proportion to the amounts used The system is able to tolerate certain amounts of toxic substances without deleterious effect, but after this limit is reached, the addition of only fractional amounts will produce effects much more pronounced than the proportion these amounts bear to each other That is, one-half grain of morphin produces more than twice the toxic effect of one-quarter grain, if one-quarter grain is the limit that can be tolerated without deleterious effect So it is with ether adjuvant to nitrous oxid, the resulting ether toxication is much less than the proportion the adjuvant ether bears to the amount of straight ether that would have been required

The addition of a small amount of ether to nitrous oxid not only increases the depth of anesthesia but acts as a stimulant as well, and in this particular enhances the safety of nitrous oxid To insist, as some do, that either straight nitrous oxid or straight ether shall be administered is to limit greatly the use of this most bland anesthetic, and at the same time create such a general atmosphere that when it is used, if with normal oxygenation it does not furnish sufficient depth of anesthesia, the nitrous oxid is increased by decreasing the oxygen, thus in a small or greater degree endangering the patient The desired depth of anesthesia should, of course, be secured, but undue emphasis placed on securing it with nitrous oxid alone paves the way to danger The emphasis should be placed not so much on the anesthetic as on the technic, for most anesthetics are comparatively safe with good technic, and no anesthetic is safe with poor technic

Proper nitrous oxid administration requires more attention to technic than the other general anesthetics, yet its administration has not been standardized, and often the most ordinary scientific principles are violated For instance, in many of the most popular and widely used apparatus for its administration, the patient rebreathes through a tube from 3 to 5 feet in length, and through parts of the stand that are neither sterilized nor cleansed Simply because the patient does not know that he is to rebreathe for an hour or two through parts of an apparatus which have been similarly used by others, without having been previously subjected to the requirements of even ordinary cleanliness, is no reason why this unscientific and dangerous practice should continue to flourish And why should any patient when operated on be forced to rebreathe through a long tube? Rebreathing through a long tube unnecessarily consumes the patient's energy at a time when it should be conserved, and causes an unduly rapid accumulation of carbon dioxid, on account of the space in the mask and long tube preventing an immediate and thorough mixture of the expirations with the contents of the bag Rebreathing certainly enhances the safety of nitrous oxid, but whenever rebreathing is used, the bag should be close to the patient's face

The frequent use of a breathing tube to prevent respiratory restriction cannot be too strongly urged Nitrous oxid causes more swelling of the soft tissues of the upper respiratory tract than the other anesthetics, and at the same time it increases the volume of respiration per unit of time, in its administration, therefore, it is very important to keep the respiratory passages open Whenever respiratory restriction exists, the patient is directly devitalized by the greatly increased burden thrown on respiration and circulation, more especially when the restriction is on the expiratory movement Before a breathing tube is inserted, the patient must be sufficiently anesthetized so that the pharyngeal reflex is abolished, or else the patient will gag and cough, thereby retarding the induction or disturbing the anesthesia In ether administration, also, the prevention of partial obstruction of the air passages is greatly neglected Anesthesia is much easier and more smoothly maintained when the respiratory movement is free and unrestricted

Preliminary medication in nitrous oxid administration is a very important matter Morphin tends to allay preoperative fear, and renders the induction smoother Gatch has shown that struggling during induction is very detrimental to the heart, and all observers agree that patients who have struggled do badly under anesthesia Besides, morphin blocks both afferent and efferent impulses, thus preventing shock and rendering the anesthesia deeper and smoother Nitrous oxid anesthesia is so evanescent that very often an opiate is required for the postoperative pain immediately after the anesthetic is withdrawn, if no opiate has been administered as a preliminary It is advisable to have the opiate administered before the trauma is produced, for otherwise larger amounts will be required to relieve the pain Most, if not all, of the trouble arising from the use of preliminary morphin has been caused from too large dosage Larger amounts than one-sixth grain morphin, or its equivalent, should be used only in vigorous subjects, and the larger amounts should always be fortified with atropin

The use of a local anesthetic to block off the traumatized areas is not nearly so general as its merit warrants There is no question but that this procedure, when properly carried out, prevents shock and permits a lighter general anesthesia, and this is especially shown when nitrous oxid is administered The removal of the gallbladder requires the deepest type of anesthesia, yet when the local anesthesia is perfect, I have not had to add any ether whatever to nitrous oxid, even in this class of work The credit, moreover, for this achievement belongs entirely to the surgeon, for it is his technic that renders it possible to have such a light general anesthesia in procedures that ordinarily require the deepest type of general anesthesia

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Results of a Psychologic Examination of Criminals in Massachusetts—In Bulletin 17, issued by the Massachusetts State Board of Insanity, there is presented a tabulated report of the results obtained from the psychologic examination of 300 criminals who had been selected alphabetically from the prison records in the Massachusetts State Prison They were examined by the "point scale" method, which has been worked out for norms to the age of 15 plus for English speaking subjects and to 14 plus for non-English speaking subjects When persons grade up to these figures, they are considered to be outside the feebleminded class From the results of the examination it was ascertained that of these 300 cases, 22 per cent were feebleminded, 9 6 per cent were borderline cases, and 3 3 per cent were probably psychotic It was shown that the highest percentage of feebleminded persons is found among prisoners who are guilty of sex offenses, and the lowest is found among prisoners who are guilty of crimes against property, while the percentage of probably psychotic subjects is highest among those prisoners who are guilty of crimes against life

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THE TREATMENT OF DIPHTHERIA CARRIERS WITH IODIZED PHENOL

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Diphtheria carriers have always been a serious problem, and many methods to rid the unfortunate individuals of diphtheria organisms have been tried The multiplicity of the forms of treatment advocated is proof of the unsatisfactory results obtained with any one method Spraying the throat with cultures of *Staphylococcus pyogenes aureus* was at one time much in vogue This proved to be too dangerous a procedure,[1] and has been abandoned generally Wood[2] suggested and used a spray of *Bacillus acidi lactici* in the throat with good results C Hampsen Jones[3] used Bolton's solution in the throat of carriers with some benefit Hektoen and Rappaport[4] advocate the use of kaolin in the nose and throat, and assert that the mucous membrane of these passages is almost rendered sterile by the use of this substance Good results have been reported with the use of autogenous vaccines by some,[5] but others have found them disappointing The most common practice, and the one that has stood the test of time, has been the application of various chemicals, such as silver nitrate and hydrogen peroxid, to the throat and nose But this often fails to rid the carriers of the diphtheria organisms, and the patient remains isolated for months

The method of treatment described below has given good results in the relatively small number of cases in which we have had the opportunity of using it It is suggested, therefore, with the hope that further experience with this method will prove it to be of real value in the treatment of diphtheria carriers

The cases reported consist of carriers convalescent from clinical diphtheria in the infectious ward of the Charity Hospital, and some that did not have diphtheria but were persistent carriers In some cases, other methods had been persistently tried with failure to obtain negative cultures

In all cases reported here, iodized phenol (acidum carbolicum iodatum) of the National Formulary was used It contains 60 per cent phenol (carbolic acid), 20 per cent iodin crystals and 20 per cent glycerin In pharyngeal cases, the tonsils, uvula and posterior wall of the pharynx were swabbed every forty-eight hours until negative cultures were obtained In nasal cases, the entire anterior part of the nasal cavity was swabbed with iodized phenol every forty-eight hours Care was taken not to allow the preparation to run over the face or drop into the larynx Cultures were always made a few minutes before the local application In this way, forty-eight hours elapsed after each application of iodized phenol before another culture was made

Seventeen cases were treated Negative cultures were obtained after one application of iodized phenol in six cases (35 per cent), after the second application in five cases (29 per cent), after the third application in two cases (12 per cent), after the fifth application in one case (6 per cent), and after the sixth application in two cases (12 per cent) One case (nasal) was under treatment for twenty-one days and required nine applications before negative cultures were obtained With the exception of this case, none of the other sixteen were under treatment longer than eleven days

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[1] Davis, Clara M Tonsillitis Following Use of Staphylococcus Spray, The Journal A M A, Aug 9, 1913, p 393 Rolleston, J D Brit Jour Chil Dis, 1913, x 298

[2] Wood, H B Lactic Acid Bacillus Spray for Diphtheria, The Journal A M A, Aug 9, 1913, p 392

[3] Jones, C Hampsen, quoted by Rührah Progr Med, March, 1914, p 165

[4] Hektoen, L, and Rappaport, B The Use of Kaolin to Remove Bacteria from the Throat and Nose, The Journal A M A, June 12 1915, p 1985

[5] Hewlett and Nankivell Lancet, London, 1912, clxxxiii, 143 Weil New Orleans Med and Surg Jour, November, 1914

Fifteen of the cases were followed after leaving the hospital, and negative cultures obtained in all No treatment had been used since the discharge of the patients from the hospital, and all of them had been out from one to three weeks when these cultures were made

No bad results have been noticed from the use of this rather strong preparation in the nose and throat The application is painful for half a minute or less until the anesthetic action of the phenol takes effect There is a thin escharotic membrane formed at the site of application which remains for about twenty-four hours This disappears entirely within forty-eight hours after swabbing leaving the throat red for a few days After the redness disappears, the throat returns to normal This was true in the thirteen patients whose throats were examined from one to three weeks after leaving the hospital The throat, in each case, was found to be as normal in appearance as before the treatment was begun

The manner in which this preparation acts in ridding the throat of diphtheria organisms so promptly, we do not know It has been proved by Albert[6] that the bacteria in carriers are harbored in the crypts of the tonsils and are not on the surface of the mucous membrane of the nasopharynx Kretschmer[7] cured carriers by squeezing the crypts of the tonsils The phenol in the preparation undoubtedly destroys the outer layers of the epithelium It probably does not reach the organisms in the crypts, but it may permit the more thorough penetration of the iodin In this way the iodin may reach and destroy the harbored organisms with more certainty than it does when applied alone

In the cases reported below, the patients were admitted to the infectious service of Charity Hospital during the year 1915

REPORT OF CASES

Case 1—R W (B 5960), colored girl, aged 14, admitted November 18 with pharyngeal diphtheria, clear, November 22 Positive cultures November 29 and December 1 and 3 Swabbed with iodized phenol, December 3 Negative cultures, December 5 and 7 Discharged, December 8 December 27 negative culture and throat normal

Case 2—S W (B 5703), colored girl aged 8, admitted, November 14 with pharyngeal diphtheria, clear, November 19 Positive cultures, November 29 and December 1 and 3 Swabbed with iodized phenol, December 3 Negative cultures, December 5 and 7 Discharged, December 8 December 27, negative culture and throat normal

Case 3—H S (B 5983), white boy, aged 11, admitted, November 19, with pharyngeal diphtheria, clear, November 21 Positive cultures, November 29 and December 1, 3 and 5 Swabbed with iodized phenol, December 5 Negative cultures, December 7 and 9 Discharged, December 10 December 27, negative culture, tonsillitis

Case 4—E P (B 7336), colored woman, aged 23, admitted, December 19, as carrier, gave repeated positive cultures for three weeks previous to admittance Positive culture, December 21 Swabbed with iodized phenol December 21 and 23 Negative cultures, December 23 and 25 Discharged, December 26 Wrong address and could not follow

Case 5—N H (B 6924), white girl, aged 6, admitted, December 9 as carrier, gave positive nasal cultures, December 9 and 11 Anterior nares swabbed with iodized phenol, December 13 and 15 Negative cultures, December 15 and 17 Discharged, December 18 Not followed

Case 6—M W (B 2535), white girl, aged 3, admitted, August 19, with nasal diphtheria, gave a positive nasal culture on day of admittance Antitoxin, August 21 Negative cultures August 29 and 31 Sent home Readmitted, September 13, with a nasal discharge Positive nasal and negative throat Antitoxin (10,000 units), September 18 Nose swabbed with silver nitrate (25, 50 and 75 per cent) until October 22 Autogenous vaccine in increasing doses from October 22 to December 12 Positive cultures obtained every second day from October 1 to December 1, in spite of the vaccine and local treatment of the nose Nose swabbed with iodized phenol, December 1 and 3 Negative cultures, December 3 and 5 Nasal discharge greatly decreased in forty eight hours after first application of iodized phenol, stopped altogether after three days Discharged, December 13 with no discharge from nose but some erosion Up to the time of iodized phenol applications, the discharge had been profuse and bloody December 27, negative nasal culture and no nasal discharge

Case 7—L C (B 5449), white boy, aged 4, admitted, November 9, with pharyngeal diphtheria, clear, November 13 Positive cultures November 18, 23, 27 and 29 and December 1 Swabbed with iodized phenol, December 1 and 3 Positive culture December 3 Negative cultures, December 5 and 7 Discharged, December 8 December 27, negative culture and throat normal

Case 8—R W (B 5947), colored man, aged 19, admitted November 11, with pharyngeal diphtheria, clear, November 21 Positive cultures November 29 and December 1 Swabbed December 1 and 3 with iodized phenol Positive culture December 3 Negative, December 5 and 7 Discharged December 8 December 27, negative culture and throat normal

Case 9—J W (B 5702), colored boy, aged 10, admitted, November 11, with pharyngeal diphtheria, clear, November 18 Negative culture November 25 Positive, November 27 and 29 Negative December 1 Swabbed, December 1 and 3 with iodized phenol Positive, December 3 Negative cultures, December 5 and 7 Discharged, December 8 December 26 negative culture and throat normal

Case 10—M B female nurse on duty in infectious ward No clinical diphtheria but tonsillitis Positive culture, December 6 Negative, December 12 Positive, December 15 Swabbed, December 15 and 17 Culture positive, December 17 Negative, December 19 and 21 Released, December 22 January 8, negative culture Throat showed old adhesions and bad tonsils These were present before application of iodized phenol

Case 11—M C (B 6825), white girl, aged 12, admitted, December 7, with pharyngeal diphtheria, clear, December 10 Positive cultures, December 17 and 19 Swabbed with iodized phenol, December 19, 21 and 23 Positive, December 21 Negative, December 23 and 25 Discharged, December 26 January 4, negative culture, and tonsils somewhat congested from attack of tonsillitis

Case 12—S M (B 5667), colored woman, aged 22, admitted, November 13 with pharyngeal diphtheria, clear, November 19 Positive culture, November 24 and 27 and December 1 Swabbed with silver nitrate every forty-eight hours until November 29 Swabbed with iodized phenol, December 1, 3, 7 and 9 Positive cultures, December 3, 5 and 7 Negative, December 9 and 11 Discharged, December 12 December 27, negative culture, tonsils enlarged and patient had follicular tonsillitis

Case 13—M M (B 6932), white boy, aged 4, admitted, December 9, as carrier, gave previous positive cultures Positive nose and throat, December 11 Throat swabbed,

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[6] Albert Henry The Treatment of Diphtheria Carriers The Journal A M A Sept 27 1913 p 1027

[7] Kretschmer Zur Bekampfung der Bacillenpersistenz bei Diphtheriekonvaleszenten Med Klin 1911 vii, No 3

December 15, 19 and 21, and negative cultures, December 21 and 23 Nose swabbed, December 15, 19 and 23, and cultures negative, December 23 and 25 Discharged, December 26 January 9, throat and nasal cultures negative, nose and throat normal

Case 14—A D (B 6209), white boy, aged 5, admitted, November 23, with laryngeal diphtheria, intubated, tracheotomized, November 27, wound closed, December 18 Positive throat cultures, December 11, 13, 15, 17 and 19 Swabbed, December 19, 21, 23, 25, 27, 29 and 31 Positive culture, December 21, 23, 25, 27 and 29 Negative, December 31 and January 2 Discharged, January 3 January 12, negative culture, and throat normal except somewhat congested

Case 15—H M (B 5624), white boy, aged 14, admitted, November 12, with pharyngeal diphtheria, clear, November 14 Positive cultures, November 22, 24, 27 and 29 and December 1 and 3 Swabbed with iodized phenol, December 1, 3, 7, 9, 11 and 13 Positive, December 3, 5, 7, 9 and 11 Negative, December 13 and 15 Discharged, December 16 December 27, negative culture, throat clear and normal in appearance

Case 16—M G (B 6849), white girl, aged 8, admitted, December 12, with pharyngeal diphtheria, clear, December 10 Positive cultures, December 17 and 19 Swabbed with iodized phenol, December 19, 21, 23, 25, 27, 29 and 31 Positive, December 21, 23, 25, 27 and 29 Negative, December 31 and January 2 Discharged, January 3 January 9, negative culture and throat normal

Case 17—P A (B 5469), white girl, aged 2½ years, admitted, November 9, with nasal diphtheria, nasal cultures positive, November 27 and 29 and December 1 Swabbed with iodized phenol, December 1, 3, 5, 7, 11, 13, 15, 19, 21 and 23 Positive cultures, December 3, 5, 7, 9, 11, 13, 17, 19 and 21 Negative, December 23 and 25 Nasal discharge almost stopped, December 25 January 4, negative culture, discharge still present

Charity Hospital

THE FOLLOW UP SYSTEM OF THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

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In the spring of 1914 a committee was appointed by Professor Brewer to plan and establish a system for following the end-results for all cases treated by the surgical staff of the hospital While, previously, individual surgeons had taken pains carefully to look up groups of cases in which they had a particular interest and therefore gave disproportionate attention during and after the hospital stay, nevertheless, the end-results in the great body of routine cases had been neglected

With the advice and aid of Prof Adrian V S Lambert, a system was devised and put in operation in August, 1914 It is my purpose to describe it and give a report of the first year's work The system is the outgrowth of one used on a small scale in looking up special classes of cases, enlarged to fit the needs of the entire surgical service It divides itself into three lines of endeavor

1 To persuade the patient to return On discharge from the hospital, he is given a card on which is written a definite date and hour for examination If he does not appear, he is immediately sent a letter making a definite appointment, a week later Should he again fail, he is taken up by a social service worker who persuades him to return, or, failing this, obtains as complete information about him as possible

2 To gain and record the proper notes In the record room of this hospital the case records are bound in volumes of fifty records each and numbered chronologically according to date of discharge These volumes are too bulky to be handed about the hospital, therefore the following plan has been followed When the house surgeon completes the case record, he makes an abstract of it which contains all its essential points This is copied and sent with a scratch card to the examining surgeon, who thus has the main data of the case and a definite card on which to make his notes These notes are typed on a sheet of paper which, when the case is closed, is pasted into the bound volume With the advent of the unit history system, the patient's unit record will be sent complete to the examining room and the notes inscribed directly, with the consequent elimination of the foregoing steps

3 To maintain the interest of the attending surgeons, they are notified by mail of the various appointments for the next examining day with patients whom they have treated in the wards

The forms and letters used to carry out the system comprise

A The regular hospital bedside or name card

B A card given to the patient asking him to return On one side is printed

Name ——— No ———

We are asking you to return to see us for a few minutes in order that we may carefully watch the result of your treatment in the hospital

By so doing we may give you advice about yourself and learn some thing which will aid us in treating other patients

If you will call at the hospital at the time written on the other side of this card you will be directed to the Doctor whom you are to see.

On the other side is printed

Please come to the hospital and bring this card with you
[Date]

If you change your address send your new address to
The Presbyterian Hospital
70th Street and Madison Avenue
New York City

C A letter to be sent to the patient if he fails to return in response to the request on the card

We asked you to come to the hospital on ——— and have not yet heard from you As we explained in the last notice, we wish to find out your present condition

The treatment in the hospital gives different results in different individuals It is therefore extremely important that we should know your present condition in order that we may be able to give you correct advice and at the same time complete our record of your case

If you will call at the hospital ——— you will be directed to the doctor with whom you are to consult

Very truly yours,
———

D An 8 by 15 sheet so folded as to make a 5 by 8 folder On the 5 by 8 face is copied the house surgeon's abstract On the reverse side of the 8 by 10 portion are typed the notes made by the examining surgeon While the case is still being followed, the whole folder is filed numerically When the case is finally closed, the 8 by 10 portion is torn off and pasted in the bound volume, while the 5 by 8 abstract retains its place in the file On the 5 by 8 face is printed

Name ——— History No ———
Address ——— O P D No ———
Permanent Address of Friend ——— Admitted ———
Address of Family Physician ——— Discharged ———
Diagnosis ——— Operator ———
Treatment ——— Date of operation ———

IMPORTANT POINTS OF RECORD

History
Operation { Procedure
{ Pathology
Course
Condition on Discharge

At the top of the 8 by 10 portion is printed

Name ——— History No ———

E A carbon copy of the 5 by 8 abstract to be used to hand about the hospital to guard the master sheet from loss On the reverse side is typed a copy of the current follow up notes

F A scratch card for the convenience of the examining surgeon On one side of this card is printed

SURGICAL CONDITION

Name ——— History No ———
Date of Examination ——— Date to Return ———
Effect of treatment on chief complaints (pain function, deformity, etc)
Wound closed ——— after operation
Symptoms developed since operation

GENERAL CONDITION

Weight ——— Present weight ———
Strength ——— Present strength ——— % of normal
Work partially resumed ——— P O
Present earning capacity ——— % of normal
Appetite
Bowels { Regular { With catharsis
Irregular Without catharsis
General body systems
Please remember to fill in the dates at the top of this sheet

G A calendar file of twelve monthly guide cards, and under each month five weekly subguide cards

H A letter form sent to each attending surgeon notifying him what patients of his are expected to report on the date mentioned

Dear Doctor
The following cases operated upon or treated by you are due to report between 9 00 and 11 00 a m on Sunday ———

Name	Diagnosis	Treatment

The following is the detailed working of the scheme

1 During the convalescence the attempt is made by the visiting and resident surgeons and the nursing staff, in conversation, to impress the patient with the importance and desirability of returning to the hospital for subsequent examinations

2 On the regular bedside or name card (*A*) the house surgeon indicates, under the heading of remarks, the Sunday on which the patient is to return for observation, thus, "second Sunday in January" This first visit is made about two months after discharge from the hospital

3 The nurse in charge of the ward finds this "second Sunday in January" on the calendar and writes it on the card (*B*) thus "Sunday, January 10, at 9 o'clock in the morning" On the reverse side she writes his name and history number and gives the card to the patient

4 When the house surgeon completes the record of the case he makes a short abstract following the same headings as indicated on the abstract sheet (*D*)

5 The bedside card and the case record reach the record room in the natural order of events The record clerk takes the data from them to make out the abstract sheet (*D*) In a column "To Return" at the right of the sheet she types the date set by the house surgeon for the first follow up examination

6 The carbon copy (*E*) and the scratch card (*F*) are clipped together and filed under this date in the file (*G*)

7 When the date set for examining the patient arrives, all the cards for this date are arranged according to sex and alphabetically and sent to the examining room At the same time the record clerk makes out the notification sheet (*H*) to each visiting surgeon

8 The examiner writes his notes on the scratch card (*F*), being very particular to write after the heading "To Return" the date on which the patient is to be next examined If the case needs no further investigation he writes "Close record" This date starts the whole machinery afresh just as did that indicated by the house surgeon

9 The cards *L* and *F* are returned to the record room The record clerk copies the notes on the 8 by 10 section of *D* and on the reverse of *E* *E* and a freshly prepared *F* are filed under the date last indicated, and *D* returned to the numerical file

10 If the patient fails to appear, the record clerk knows it because of the blank sheet returned from the examining room She immediately sends him the letter (*C*), dating it for the next Sunday, when the abstract and scratch card are again sent down

11 Should he again fail to appear, his name is given to the social worker, who persuades him to return, or, failing this, gains what data she can Two weeks are allowed for this search, so that by three weeks after the proper date for examination the patient is either reported on in some manner or marked "Lost" Two classes of reports are turned in by the social worker (*a*) a medical report in which sufficient data are given for determining the present clinical result, and (*b*) an "incomplete" report which, although not containing complete medical information, nevertheless gives some knowledge of the patient's earning capacity, general health, etc

Of irregular cases there are two important classes those patients living out of town and those who straggle into the hospital at odd times The former we have as yet made no systematic effort to follow, although many report by mail in response to the card given them in the ward The stragglers are referred to the accident room, where on request by telephone the history abstract is sent The further examination is conducted, as previously described, by the intern on duty

The personnel required thus far has consisted of one full time assistant clerk in the record room, two assistant visiting surgeons working three hours a week each, and the full time of one social service worker The latter, in addition to hunting up the cases outside the hospital, aids in the work of the Sunday morning clinic By so doing she not only keeps more intimate track of the patients and gets to know them individually, but also learns the type of information desired in the follow up work

One assistant surgeon is designated "the follow up committee," and has general oversight of the follow up work

RESULTS

	Number		Per Cent	
Personally appeared for examination at the hospital				
Response to card given in ward	1,018		44 7	
Response to letter	526		23 1	
Response to social service	213		9 4	
Total		1 757		77 2
Medical information obtained directly				
By letter from patient	44		1 9	
Through social service	33		1 4	
Total		77		3 3
Information about patient obtained by social service (earning capacity general health, in complete medical data etc)	252		11 1	
Total		252		11 1
Grand total of patients about whom information has been obtained		2,086		91 6
Cases lost				
Out of town cases not followed	155		6 8	
Not found by any part of system	37		1 6	
Total		192		8 4
Total patients asked to return		2 278		100

The 2,278 cases recorded in the accompanying table comprise all those followed, including patients asked to come back a number of times, as many as four. Of the cases lost, it should be noticed that there were only 1.6 per cent. which had been the object of the systematic search.

The table states clearly the results of the first year of operation of the system. We feel that the year's average will discount any initial overenthusiasm on the part of those working for the system, as will also a rather opposite attitude of a small number toward added work from another innovation, so that the results indicate what may be fairly expected in New York, whose immigrant population shifts about as frequently as in any city. Possibly the 6.8 per cent. of out of town cases should not be put down as failures, but inasmuch as we have heard from some of them, they have so been classified.

Concerning the clinical data obtained or the disposition of the cases, no tabulation has been made; they are available in each case for those looking up an individual case or classes of cases. Whether or not all types of cases should be followed has been much discussed. The present feeling is that any case serious enough for hospital treatment is worthy of being subsequently followed. Indeed, it has been in the so-called "minor" cases that the greatest surprises in end-results have occurred.

After careful watching of all parts of the system for a year, various improvements have suggested themselves. The adoption of a unit history system will do away with all abstracting and duplication. The notes will be written only once and on the record sheet proper. One of the most difficult steps in the work has been to convey to the patient the reason for asking him to return. The majority of them come back for the first visit merely because we ask them to. The social service worker finds that this lack of understanding is responsible for the failure of the majority of those able to return who fail to do so. In the belief that one used to handling patients from this standpoint, and especially one who will later see them can talk to them better than a changing surgical staff, it is now proposed to have the social worker doing this work attend to the making of all appointments.

Other causes of failure have been those usual in any social work: illiteracy, dissatisfaction with treatment, fear of being dunned for money, giving of false addresses, etc.

Factors working for success have been: the obtaining of accurate addresses, particularly that of a friend having a fixed place of business, the giving to the patients of a clear understanding of the purposes of follow-up work, definiteness in appointments and directions, the demonstration of an interest in the patient as an individual rather than a "case," and a certain amount of dispatch in handling the case when the patient returns for examination.

One pleasing feature has been the recent referring of new patients by old ones "because they watch you so carefully afterward."

Disinfection.—Terminal disinfection no longer holds a prominent place in the control of infectious diseases, for the reason that by the time the infective agent has disappeared from the person of the patient, it has long since disappeared from the premises and surroundings.—John S. Billings, M.D., *American Journal of Public Health*, December, 1915.

THE CONTROL OF DIPHTHERIA EPIDEMICS

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For the control of diphtheria epidemics we now have a means which is practical, efficient, and available to any physician. Schick, working in von Pirquet's clinic in Vienna, discovered the value of this test, and therefore it is known as Schick's test. It requires no special technic that is not easily acquired by any physician.

The test depends on the reaction of nonimmunes to an injection of diphtheria toxin, the amount of which is a one-fiftieth minimum lethal dose for a 250 gm. guinea-pig. The necessary articles are a 1 c.c. hypodermic syringe graduated into tenths, a very fine needle, sterile normal salt solution, and the diphtheria toxin. The toxin is diluted in the salt solution according to the strength as determined by laboratory tests. The amount of the solution used will depend on the dilution. It will be found convenient to make the dilution so that approximately 0.2 c.c. will be the proper amount, as it makes a good sized bleb.

The injection should be made into the skin and not subcutaneously. This is easily accomplished if a small bit of the skin is held tightly between the thumb and forefinger of one hand, and the barrel of the syringe in the other is held lower than the needle point. The reaction if positive is shown by an area of inflammation varying in extent from 2 to 5 cm. It is more intense in the center, and endures for about ten days to two weeks, when it gradually disappears, leaving a brown desquamating surface. Those giving such a reaction are susceptible to diphtheria, while those who do not have a natural immunity which is adequate to protect them.

Diphtheria, especially in congested districts and where individuals are brought in close daily contact, spreads very rapidly until every susceptible individual has been attacked. Heroic means have been used to quell the infection and prevent the further spread with but partial success. The fight has been made with throat swabs, quarantine and isolation. These have served to check the progress, and to prevent the disease from visiting every person in the community, still it has not been altogether satisfactory.

The measures most commonly employed in the fight against diphtheria epidemics are throat swabs, quarantining or isolation, as the case may be, of those from whose throats cultures of diphtheria bacilli are obtained. The fault of such a method is that it is never possible, or seldom so, to separate every individual during the time that it is necessary to incubate the cultures and before which it cannot be known who is carrying the infection, and unless that can be done, it is very obvious that during the twelve to eighteen hours in which the cultures are being incubated, those who have infected throats are passing the infection to others, so that when it is known which cultures show the specific organism, quarantine of these persons can bring only partial success in the fight against the further spread of the disease, because of those who have been infected in the meantime. And it is by no means always possible to isolate every person who has been exposed, for even twelve to eighteen hours. Such was the case in the epidemic cited below.

The only other way to put an end promptly to the epidemic is to inoculate every person exposed with a prophylactic dose of antitoxin This necessitates an expense, half of which may be saved by using Schick's test

It is therefore plain that the present methods which are commonly employed against diphtheria epidemics are unsatisfactory They do not at all meet the exigency of the occasion Schick's test, however, answers all the requirements in that it points out all those individuals who are susceptible, who do not have sufficient natural immunity, and these may be then given a prophylactic dose of antitoxin In this case it makes no difference if the individuals exposed cannot be isolated, and it saves the expense of injecting all, as a good number will have natural immunity enough to protect them

The circumstances of an epidemic of diphtheria, which occurred in a school for the blind, is a striking example of the efficiency of the Schick test The conditions in the school were unusual for the rapid spread of the disease The organism had fallen on fertile ground both as to physical condition of the noses and throats of the pupils and as to means for its propagation Every child in school had badly diseased tonsils, and a large majority had adenoids some of which hung down into the pharynx They groped their way from corridor to corridor by sliding their fingers along the walls, they felt their way up and down stairs by slipping along the banisters and they recognized each other by the sense of touch The library, the books of which were daily handled by nearly every child, became a depository for the germs On the leaves of these books, as the lines were traced by the infected fingers of the carrier, were left the organisms to be picked up by the next reader To stop the epidemic before it could get under good headway was imperative It was thought that the swab method alone might accomplish the desired result, and accordingly all throats were swabbed, 150 in all, and the swabs sent to the State Laboratory of Hygiene, by Dr Hoyt, the deputy state health officer

At that time only four cases had occurred, and out of the 150 swabs only four positive cultures were secured The disease abated for a short while, but in a little over a week two new patients came down, and it was at that time that it was decided to use Schick's test

The pupils were taken first, having been placed in a line and marched first through the wash room where their sleeves were rolled up to above the insertion of the deltoid muscle, and an arm washed with green soap and water and cleaned with alcohol They were then marched through the room, where they received their injection, and as each one received his injection a throat swab was taken After the pupils the teachers and help were treated in the same manner

Ninety-one pupils were tested, forty-four girls and forty-seven boys, and fifty-six others, which included the teachers in the institute and the help The arms were inspected for inflammatory reactions at the end of thirty-six hours, and all showing a positive reaction were given 1,000 units of antitoxin At that time out of the number tested, forty-four showed an undoubted positive reaction, and ten were doubtful Only ten boys showed a positive reaction They were all aged 12 years or older Among the teachers and help, all of whom were past the age of maturity, thirteen gave a positive reaction, and twenty-one out of the forty-four of the girl pupils showed a positive reaction The doubtful cases showed varying degrees of intensity in the reaction, and therefore only those showing the most pronounced effect of the injection were treated with a prophylactic dose of antitoxin This was partly because I was a little short in my supply of antitoxin and partly because some of the reactions were judged to be pseudoreactions and therefore would not need any prevention, instead of an incomplete reaction due to the possession of a partial degree of immunity There were five out of the ten doubtful ones to whom I thought it advisable to give a prophylactic dose of antitoxin The other five were allowed to go without it Just one week from that time one of the five who had not been given treatment but who had had a doubtful Schick reaction developed diphtheria After that no more cases occurred

In the meantime the swabs which had been taken when the tests were made disclosed six positive throat cultures Of this number four showed by a positive reaction that they did not possess enough immunity, $\frac{1}{31}$ unit of antitoxin to the cubic centimeter of blood, to protect them and therefore were given 1,000 units, while one gave no reaction The pupil giving a negative reaction was undoubtedly a carrier He was given 1 000 units of antitoxin, as it was thought that perhaps it might aid in securing a negative culture This was of no avail, however, for he is still a carrier Many agents have been employed in his treatment, among them being kaolin

The true reaction is not always easy to differentiate from the pseudoreaction, particularly because there are some who possess just enough immunity to spoil the reaction and not yet enough to prevent them from developing the disease I am inclined to believe, too that it is just such persons as these who may show a belated reaction Even after seventy-two hours there were six pupils and one other who developed marked inflammation, enough to make it necessary to give these an immunizing dose of antitoxin The induration does not always seem to be a guide, as some of the inflammatory reactions which did not prove to be a result of the toxin injected showed less induration than those which were a result of the toxin The extent and severity of the inflammation certainly can be no guide, for the variety in this particular is marked The patient who had a doubtful Schick reaction and afterward developed diphtheria was an example in proof of this, for the reaction in this case was only a small fringe of red around the area into which the injection had been made However, in every case which showed a susceptibility to the toxin, whether the reaction was extensive or small, tenderness was a marked sign, and complaint could be elicited on slight pressure Those whose reaction was due to other causes than the cellular response to the toxin seemed to be less sensitive to slight pressure

Those with extremely sensitive skin may show an inflammatory reaction somewhat similar to those who for one reason or another do not react characteristically In one case which I observed, in a few minutes after the bleb had been made, the elevation disappeared and in its place was a dark spot It looked very similar to the marks that are easily made on the skin by some slight bruises When it was inspected at the end of thirty-six hours, there was a slight flush for considerable area around the dark center, which still remained, but pressure brought no pain This individual was not given any antitoxin, nor did she develop diphtheria

The whole subject of the control of epidemics of diphtheria may be briefly summarized as follows Methods commonly employed in the fight against diphtheria are not adequate, Schick's test requires no special technic that cannot be easily developed by any physician, and therefore is available to all, Schick's test is a prompt, economic and satisfactory method of quelling epidemics of diphtheria, when used together with swabs

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MALIGNANT DISEASE OF THE OVARIES

FURTHER STUDIES *

MILES F PORTER, M D
FT WAYNE, IND

Two years ago I read a paper before this association on the subject of sarcoma of the ovary Since that time there have occurred in my practice three cases of malignant disease of the ovary The occurrence of these cases prompted the further inquiry into the subject of malignant diseases of the ovary and prompted me to write this paper

Case 1—Mrs G, aged 33, came to me complaining of enlargement of the abdomen She had been married twice and had one child, aged 16 Her general health had been good I had operated on her seven years ago for a large papillary cyst of the left ovary complicated with pus tubes She made an uneventful recovery and enjoyed good health She has not menstruated for two years Three years ago she first noticed the enlargement of the abdomen Two months prior to her last visit to me she had had some irritability of the bladder One maternal uncle and one maternal aunt died of cancer Examination revealed a large pelvic tumor about the size of a seven month's pregnancy The scar of the previous operation was quite thin There was a large lymphatic gland in the right inguinal region the size of a hazelnut This was said to have appeared three weeks ago as the result of a fall She was operated on, September 8, and a large multilocular cystic tumor of the right ovary removed The adhesions were very extensive and close, necessitating the baring of the ileac vessels and the ureter during the operation, together with a removal of part of the uterine wall to which the tumor was attached The recovery was uninterrupted and the patient remains entirely well up to date It should be added that there was no ascites

Unfortunately this tumor was mislaid and destroyed, so it was not subjected to microscopic examination A particularly interesting feature in this case was that seven years prior to this operation the patient had the opposite ovary removed for a large cystic tumor which was pronounced by the pathologist, Dr Rhamy, to be a benign papillary cyst That the pathologic diagnosis of this first specimen was correct I think the history of the case proves I myself do not think there was any connection between the first tumor and the last The last tumor removed was as nearly as I can judge from the gross specimen a malignant tumor of the ovary Unfortunately this question cannot be settled unless there should be a recurrence which would result in a microscopic examination of the growth The bilateral tendency of ovarian growths is well recognized, and, indeed, has led some men to advise removal of both ovaries whenever the removal of one becomes necessary because of tumor formation

Silhol[1] asserts that this bilateral tendency is quite as well marked in innocent as it is in malignant tumors Clark in commenting on Silhol's paper thinks that Silhol's statement is unnecessarily radical, but further on in the course of his remarks says, "Of course, if the original unilateral lesion shows the least suspicion of malignancy, the question assumes a different aspect at once, this only emphasizing, however, the great importance, especially in ovarian surgery, of a thorough knowledge of living pathology on the part of the operator " My experience is quite large, covering hundreds of cases, and I cannot recall ever having been called on to remove a cyst of the remaining ovary after an ovariotomy had been done for like trouble save in the case reported above I am, therefore, inclined to take an even more conservative stand on this subject than does Clark I should not advise the removal of what appeared to be a healthy ovary even if its fellow was the subject of malignancy, provided the malignant disease seemed to be confined to the ovary removed Certainly it seems to me that this should be the rule which should guide us in operating on young women In women near the menopause there could perhaps be little objection to removing the remaining seemingly healthy ovary

G W Perkins,[2] in a paper in which he analyzes the reports of the Massachusetts General Hospital between 1870 and 1910, reaches the conclusion that "fluid in the abdomen of a child without general anasarca, provided pericarditis and cirrhosis should be excluded, should always be investigated by exploratory laparotomy "

As a result of personal experience, illustrated by the following case, I should be inclined to amend his conclusion by substituting the word "woman" for "child "

Case 2—Mrs J G B J consulted me, Sept 15, 1915, complaining that her abdomen had been filling up and that there was epigastric distress after meals which was somewhat relieved by food She had had malaria frequently when a child She had been married for seventeen years One child was prematurely born at seven months During this pregnancy she suffered severely from albuminuria and was quite dropsical Menses were regular and normal at three to three and one-half weeks She was subject to sick headaches The family history was negative The present trouble commenced with abdominal distress about two and one-half months ago, bloating was severe, and the bowels were kept open with medicine There was some swelling of hips, thighs and ankles, but this had gone down The patient gained in weight, but the extremities were thin Examination revealed a very much enlarged abdomen with fluctuation, and dulness on percussion below and at the sides with the patient on her back, the line of dulness changing with a change in position of the patient The examination of the urine, blood, heart and liver revealed no cause for the ascites The Wassermann examination was negative

An exploratory operation revealed the abdomen well filled with an amber colored fluid and containing a right ovarian cyst about the size of a coconut The omentum was somewhat shortened and thickened The opposite ovary was healthy The cyst was torn during delivery, and a very small part of the contents escaped Prior to the operation a bimanual examination failed to reveal any sign of this tumor, which proved on examination to be a carcinomatous cyst It may be of interest to note that with a view to preventing the return of the ascites, I stitched the omentum into the abdominal incision throughout practically its whole length

Up to the present writing the woman remains perfectly well It is, of course, probable that she will

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* Read before the Western Surgical Association at Des Moines, Iowa, Dec 17, 1915

[1] Silhol Progr Med, 1914, ii, 247
[2] Perkins, G W Internat Abstr Surg, July, 1914, p 54

have a return of her trouble However, there was no evidence of involvement of any of the other abdominal organs The only excuse I had for operating on this woman was that I found an ascites for which I could find no cause The operative findings proved the wisdom of the course pursued, and strengthened me in the position that I have long held, namely, that fluid in the abdomen should lead to an exploratory operation when the presence of the fluid cannot otherwise be accounted for, and that in women this dictum should be well nigh imperative

CASE 3—Mrs C G, housewife aged 48 came to me July 29 1915 complaining of a lump in the lower right abdomen She had malarial fever three years ago The tonsils had been removed and the nose operated on twenty two years ago The menses came at 13 and were regular until last August at which time following the removal of a small fatty tumor from the breast, the menses became irregular in that there was a decided tenderness to flow too frequently Since Easter she had been flowing every day but never very profusely She had been married eighteen years and had had three children the youngest was 15, she had had no miscarriages The family history was negative The patient said she did not feel sick but had lost some flesh The bowels were constipated The appetite was fair Examination revealed an even smooth firm movable growth apparently attached to the anterior right aspect of the uterus I considered the case to be one of fibromyoma and advised its removal The patient consented to have it done but wanted to go home and await a more convenient time for having the work done.

About three months later she was taken suddenly ill with pain in the lower right abdomen which required morphin to allay There were some nausea, chilly sensations and hot flashes I found on inquiry that she had two or three similar attacks but none of them so severe On examination the uterine tumor seemed to be much larger than when I last saw her The whole abdomen was tender, especially the lower two thirds The pulse was somewhat quickened the temperature 102 The patient was put to bed with an ice bag on the abdomen and allowed no food for three days, when the more acute symptoms subsided and the abdomen was opened revealing a right ovarian tumor twisted clockwise three fourths of a turn on its pedicle. There was little fluid in the abdomen, slightly tinged with blood The tumor itself was solid, seemed to be enclosed in quite a perfect capsule and was dark colored in places owing to extravasated blood consequent on the twist The tumor on section proved to be solid and mottled the prevailing color being yellow with some dark red spots as a result of hemorrhage into the substance of the growth The upper third of the tumor was darker owing to the fact that in this area there was more extravasation of blood because of the twist in the pedicle, than in any other parts of the tumor The pathologist's report was adenocarcinoma with hemorrhagic infiltration

The gross appearance of this tumor on section is so significant of malignancy that a laboratory report to the contrary would not be accepted unless it was based on a careful examination of the entire tumor, and then I should want to wait until time for further clinical manifestations had gone by, before concluding that it was benign

Speaking of tumors generally, I should say that negative reports from the laboratory when based on a few sections should never be allowed to outweigh the evidence gained by the examination of the gross specimen plus that obtained from the clinical history On the other hand, one frequently meets tumors which present little or no macroscopic evidence of malignancy, but which on microscopic examination show unmistakable evidence of malignancy A case occurring in my own practice recently will serve to illustrate this point

CASE 4—An elderly woman presented herself with a tumor of the breast the character of which I regarded as doubtful The breast was removed and on section the mass was found to be made up chiefly of two cysts the size of a chestnut distinctly separate movable and containing each a little slate colored grumous fluid My doubt as to the malignancy of the tumor was so great that I felt warranted in closing the wound while waiting for the pathologist's report About the time the wound was closed the pathologist reported that the tissue did not look good to him, whereupon the usual radical operation was done Later on I received a further report from the pathologist in which he says, 'A very interesting specimen as the microscopic picture of malignancy is out of all proportion to the macroscopic"

It will be remembered that in this case and in Case 1 there was no fluid in the abdomen except what might be accounted for by the twist in the pedicle These are not the only malignant tumors of the ovary that I have found without ascites It should be remembered, therefore, that while ascites in connection with ovarian tumor is an indication of malignancy, the absence of ascites in ovarian tumors does not necessarily mean benignancy It is well here to emphasize the point that ascites developing in connection with malignant tumor of the ovary does not mean necessarily an involvement of the peritoneum in the malignant process Just why some of these tumors are accompanied by ascites while others of them are not remains unexplained Not infrequently, indeed, as in Case 2, reported above, the ascites may be the only or the principal sign of trouble My own belief, which is borne out by my experience, is that the rapidly growing tumors are the ones most likely to cause ascites

G Kline[3] found on microscopic examination of two malignant papillomas of the ovary immediately under the surface epithelium of the villi, and only there, that the connective tissue was saturated with serous fluid "This was due to absorption on the part of the tumor epithelium which had taken up fluid from the lymph spaces of the abdominal cavity This fluid may possibly have atoxic effect on tumors If this is true, the appearance of ascites in malignant tumors is to be regarded as a protective procedure on the part of the body designed to destroy the tumor Therefore, the subcutaneous injection of ascitic fluid may be regarded as a rational therapeutic procedure" Concerning the influence of malignant ovarian tumors on the menstrual function, cases are encountered wherein they seem to cause amenorrhea, and others wherein they seem to produce menorrhagia or metrorrhagia These opposite effects on the menstrual function may be explained very logically, it seems to me, by the overgrowth of ovarian structure on the one hand, or its destruction on the other However, it is found that some patients suffering from malignant ovarian tumors present a history of amenorrhea followed by menorrhagia or metrorrhagia or vice versa The explanation for this condition is to me not apparent In the case histories which I went over in my former paper, I found two patients who had a bloody vaginal discharge which came on years after the menopause One of my own cases reported in that paper was that of a girl of 15 who had never menstruated though she apparently was quite mature for her age In this patient both ovaries and uterus were involved in a large sarcomatous growth (It is interesting to note in this connection that this patient, now more than two years and six months after the operation, is still in perfect health)

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[3] Kline G Internat. Abstr Surg July 1914 p 54

In Case 1, reported above, the patient menstruated regularly for five years after the removal of the first tumor, but had no menstrual flow for two years prior to her last visit to me. In Case 2 the menses were normal. In Case 3 there was some menorrhagia. I am inclined to attribute this symptom in this case, however, to the twist in the pedicle. I think we are warranted in concluding that either amenorrhea or menorrhagia is much more common in malignant tumors of the ovary than in benign tumors of the ovary, and that both forms of irregularity are equally indicative of malignancy. In my former paper I quote Wermuth as saying that sarcoma in the young may cause premature signs of puberty, and added that I had not been able to find any other author who confirmed this statement, and that it seemed to me problematic. Since that time I have run across a report of the following case by Verebely[4]:

> A girl, 6 years old, up to 5 years of age had developed normally. Since a year hemorrhages had recurred monthly and other signs of puberty had appeared. The child was about 4 inches taller than one of corresponding age, and the breasts, which were the size of lemons, contained glandular structure. In the axillae, as well as the pubic regions, there was an abundant growth of hair. The labia were thick and pigmented and the vagina of abnormal size. Examination of the abdomen revealed a nodular tumor of the size of a child's head connected with the left side of the uterus. At the operation a very vascular ovarian sarcoma was found. The uterus was of the size of that of an 18 or 19 year old girl, the right ovary being normal.

THE CITY'S NEED OF A PSYCHOPATHIC CLINIC*

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The first psychopathic clinic established in this country was the hospital at the University of Michigan. The best practical illustrations of this type of institution which we find in this country are the Henry Phipps Clinic in Baltimore and the psychopathic Clinic in Boston; the latter, although controlled by the state, is closely affiliated with the scientific activities of Harvard University. These clinics do not present any of the features of the old asylums, and are modern hospitals in every sense of the word. Not only are they well equipped for taking care of patients, but also they are supplied with many facilities essential for carrying on research in very important fields. Fully 90 per cent. of the patients at the Phipps clinic are classed as "voluntary." The old asylum no longer exists in the modern conception of psychiatry.

As to the reasons for the establishment of psychopathic clinics, those may be mentioned first which are in effect an *argumentum ad hominem*. According to the statistics collected by Dr. Thomas W. Salmon for the National Committee on Mental Hygiene, in 1910 there were 184,000 students in colleges and universities, and in the same year there were 187,000 patients in the hospitals for the insane. The financial cost of maintaining these patients in institutions from 1904 to 1915 would call for the expenditure of $150,000,000 more than the sum expended in the building of the Panama Canal. In the state of New York at present there are about 32,000 patients in the hospitals for the insane; of this number 15,000 are aliens and 9,000 are foreign born. I think we all agree that although immigrants who have sound minds and sound bodies are both required and desired, we should not be expected to take care of the large number of feebleminded persons and the insane shipped to this country from Europe. When we reflect on the significance of the statistics just quoted and remember the startling incidence of functional nervous diseases, we find signs both tragic and alarming which indicate the necessity for radically changing our present methods in attacking these great biologic problems.

To refer to the medicolegal aspect of the problem, enormous sums of money are squandered in prosecuting individuals who are of unsound mind, when, by the introduction of a different system of examining patients, justice would be done to the individual and large sums of money would be saved for the community, and society would be more effectively protected against the overt acts of irresponsible persons.

Unfortunately, through the lack of proper facilities, psychiatry has not received from the medical profession the attention it has deserved. This important branch of medicine is practically an unknown field to the majority of physicians. Patients afflicted with psychoses come under observation, through the failure to recognize the initial stages of the disease, only at periods when the pathologic process has reached an advanced stage of development. If these conditions are allowed to continue, the menace to our civilization will become far greater than that of war. We must attack the problem from a point at which there is some prospect of success. Greater facilities must be given to physicians for studying the initial stages of mental disorders; and the public, particularly parents and teachers, should be trained to recognize the danger signals in order that intelligent assistance may be summoned before disaster is imminent.

My experience at Princeton University has convinced me that teachers should be trained to attack the problems of education from the broad biologic and not the scholastic point of view. Through the courtesy of my colleague, Dr. Joseph C. Raycroft, head of the Department of Hygiene at Princeton University, I have had the privilege of talking to students who have had difficulties in adjusting their lives satisfactorily. In a relatively small university community the number of students who came voluntarily to seek advice was a large one. You will pardon me if I emphasize the importance of my experience, as I believe that it is a unique one, and it has brought home to me as nothing else could do the necessity for the practical realization of the fact that life is a process of adjustment, and education should be a process of assisting human beings to the successful adaptation of their activities.

Many of us are accustomed to use the phrase "life is a process of adjustment" without appreciating its applicability to the activities taking place in the higher levels, such as consciousness. We do not need to be reminded of the familiar phenomena of adjustments in the reflex and automatic levels, but many medical men fail to appreciate the fact that all our conscious activities represent mechanisms of adjustment. When I address an audience I make an effort to adjust my activities to the environment, by maintaining my balance, mental as well as physical, by modulating my voice and by trying to present the subject under discussion so as to stimulate and maintain interest without arousing animosity. All these responses represent biologic reactions, and the important thing for us to remember is that if we restrict our attention merely to the study of the conscious phenomena, we shall probably not succeed in gaining a comprehensive view of the various mechanisms concerned. The reactions must be studied as units expressed either in thought or behavior, in consciousness as well as in automatic or reflex movements. If we desire to know more about the machine we must also be familiar with the functions of different internal organs, analyze the relationships existing between the parts, and finally study the integration of the different functions as expressed in behavior.

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[4] Verebely: Sajous's Analytic Cyclopedia of Practical Medicine, 1915, vii, 256.

* Read before the Physicians' Club, Chicago, Nov. 23, 1915.

In the study of the human machine it was quite natural that the attention of physicians should be first attracted to the relatively simple functions of the different internal organs while less attention was paid to the complicated synthesized activities expressed in thought, word and speech. Unfortunately the psychologist embarrassed by his metaphysical traditions studied the conscious processes as if they were not related directly to the other reactions of the organisms. From the study of the abnormal much has been learned that is useful in interpreting normal functions. This principle is true for all the different levels of activity, whether they are reflex, automatic or conscious. Many of the interesting cases of "forgetting" which we observe illustrate the intimate dependence of the higher on the lower levels. A student recently complained to me that he was unable to remember certain important formulas, and this defect of memory had become so serious as to suggest to his mind the advisability of giving up his university work. In conversation it soon became apparent that this young man was trying hard to repress the memory of certain unpleasant incidents, and although he had been partially successful in accomplishing this object, he had also established a series of mechanisms which threatened to interfere seriously with his intellectual processes.

There are many other experiences gained in the study of abnormal phenomena which may be utilized in assisting us to solve some of the great problems presented by civilization. If physicians were able to gather more extensive information than that yet acquired in regard to the nature and genesis of the mechanisms concerned in the formation of prejudice, hatred and envy, the progress of civilization would be accelerated. From the study of the paranoiac as well as other unfortunate individuals who are subject to fixed ideas, it is obvious that the education of the emotions is of more fundamental importance than training the intellect. The absence of prejudice and the capacity of our minds to perceive and accept the truth depends more on the regulation of feeling than of thinking. The dangerous conflicts which are precipitated are those arising from the incoordination of feeling and thinking. We are all familiar with "the shut-in" type of individual who tries to conceal all evidences of the dissociation existing between his emotional and intellectual life. In cases of dementia praecox we have an excellent illustration of the accumulated power of impulses which often destroy all the defenses and drive the individual to the performance of insane acts. Patients of this type also illustrate in a striking manner a principle which should be recognized by all those who call themselves educators, namely, the necessity of teaching young people to face the world of realities and not adjusting their activities temporarily to an imaginary world until driven by fate to face the common facts of existence.

There should be better opportunities offered to physicians than exist at present for applying many of the facts discovered by experiment in regard to the nature of the mechanisms conditioning the emotional life to assist in the interpretation of the behavior of human beings. In this connection I have only to recall to your mind the important investigations carried on by Prof. W. B. Cannon of Harvard and his pupils in regard to the relation of the functions of the suprarenals and other organs to such conditions as hope and fear. In my own experiments made on the vertebrate embryo I have been impressed by the necessity of studying the nervous reactions in relation to the development of functions in such organs as the thyroid, thymus and suprarenals, as it is evident that when the organism first begins to respond to incident stimuli these organs have received a nerve supply and may be said to form an integral part of the nervous circuit.

The establishment of a psychiatric clinic not only is evidence of increasing interest in the study of psychiatry, but also marks an intelligent desire to study human beings. The present crisis in civilization should not make us pessimists, as it was not until Pinel in 1798 published his "Nosographie philosophie" that there was any sign given indicating man's interest in the study of his own activities.

Pinel, as you know, not only was responsible for the introduction of more humane methods in the care of the insane but he also opened up a new field of investigation by showing that one of the chief avenues of approach to the study of normal human activities was by analyzing the mechanisms of the abnormal mind. He suggested many problems, the solution of which would have an intimate bearing, not only on the nature and causes of alienation but also on questions of fundamental importance to the educator and the student of social phenomena.

I need not recall the importance of offering better facilities than those now existing for training physicians in psychiatry, but there is one phase of a great problem which has not received the attention it deserves, namely, the important duty the modern alienist has to perform in assisting in the reorganization of our entire educational system. We have seen how important it is for our civilization that the public should be made to appreciate the significance of the phrase, 'Life is a process of adjustment," and that eduction is not a method for acquiring information but a means for securing the successful adaptation of an individual to a suitable environment. The old scholastic ideals of education are beginning to disappear, and in their place, thanks largely to the work of the modern alienist, a new system is developing which takes into account the biologic needs of human beings. If the government "of the people, by the people, for the people" is to be successful, it is essential that the activities of the individual citizens, and the laws controlling the relationship existing between these social units, should be recognized, and society assisted to develop along the lines which are in accordance with the principles governing human life.

It will be unfortunate if we do not take to heart one of the great lessons taught by the present European conflict. Is not civilization paying today for man's failure to take an intelligent interest in the study of his own activities? We know that the most serious conflicts which arise in the life of any person are not directly due to disorders in the field of consciousness, and this is equally true for the individual and the nation. Whenever human beings or nations create an imaginary world in which they attempt to live until some disaster necessitates a sudden readjustment of the fictitious environment to meet the conditions of actual facts, a crisis of major importance is precipitated. From the dawn of history to the present time the thoughts, words and deeds of an imaginary human race have been written for us by philosophers, poets and historians. Conceptions of religion and patriotism, ideals of social justice, and aspirations for the future have been associated in our minds with the imaginary emotional reactions of an idealized race of beings, and now we have been rudely awakened to the necessity of studying men as they live, move and have their being.

REMOVAL OF TONSILS AND ADENOIDS IN DIPHTHERIA CARRIERS*

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The importance of promptly ridding the diphtheria carrier of diphtheria bacilli needs no emphasis. Not only may the carrier spread diphtheria, but in children the loss of school days and the difficulties of quarantine are serious matters. In hospitals for infectious diseases, the presence of otherwise healthy patients for a prolonged period, with occupation of beds needed for those actually sick, and with the constant liability to cross infection, is, to say the least, burdensome. In this hospital it has been found, as will be reported soon in detail, that dry and finely powdered kaolin properly applied materially shortens the necessary stay of patients in the hospital. In the course of observation, however, several instances have been met in which the local application of kaolin[1] seemed to be without any effect on the bacilli. In view of the prompt disappearance of the bacilli in these cases after tonsillectomy and removal of adenoids, it seemed advisable to make a brief report of the results.

Case 1.—Boy, aged 13, onset June 4, admitted June 8, 20,000 units antitoxin, a case of moderately severe pharyngeal diphtheria. Kaolin was applied daily from June 14 to July 30 but without effect. July 31, the tonsils and a small amount of adenoid tissue were removed. The tonsils were large and irregular, with large crypts. The cultures became negative immediately following the operation, after having been positive for fifty-seven days before.

Case 2.—Girl, aged 14, onset September 6, admitted September 9, 40,000 units antitoxin, a case of severe pharyngeal diphtheria. The bacilli persisted in spite of the use of kaolin until October 21, and then the tonsils, which were large and with deep crypts, were removed. The cultures became immediately negative.

Case 3.—Girl, aged 8½ years, onset October 20, admitted October 26, 20,000 units antitoxin, a severe case of pharyngeal diphtheria. The bacilli persisted to November 27, and then the tonsils, which were large and ragged, and a moderate amount of adenoid tissue were removed. The cultures became promptly negative for diphtheria bacilli.

Case 4.—Woman, aged 21, onset November 15, admitted November 17, 25,000 units antitoxin, a case of moderately severe pharyngeal diphtheria. The cultures from the throat and nose continuing positive, the tonsils were removed December 8, the right being large, irregular, with many crypts, the left small and submerged. The cultures were positive for two days after the operation, and thereafter negative.

Case 5.—Girl, aged 11 years, onset November 7, admitted November 9, 20,000 units antitoxin, a moderately severe case of pharyngeal diphtheria. The cultures from the nose being positive, the tonsils, which were moderately enlarged and irregular, with numerous crypts, were removed, December 8, whereupon the cultures became negative.

Case 6.—Boy, aged 8½ years, admitted as a carrier without symptoms of intoxication and treated with kaolin from November 7 to December 13, then the moderately enlarged and irregular tonsils were removed (Dr. E. McGinnis), the cultures immediately becoming negative.

In none of these patients did the operation have any different general effects than it has ordinarily. In all of the patients the Schick test gave negative results just before the operation. Six successive negative cultures were required before the patients were discharged.

The results obtained in this series indicate clearly that in persistent carriers it may be necessary to remove the tonsils and adenoid tissue if it is desired to terminate promptly the carrier condition.

The bacteriologic examination should be made with care, as it is well known that applications of medicinal agents may destroy the bacilli on the surface while leaving unaffected those in the crypts of the tonsils and the folds of the adenoid tissue.

As to the time the operation should be performed, it is perhaps advisable to wait from two to three weeks after the clinical recovery of the patient. In the case of the chronic carrier, no time limit is of course necessary.

CONGENITAL ATRESIA OF THE ESOPHAGUS

REPORT OF A CASE*

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AND
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Owing to the comparative infrequency of this condition, the following case is considered of sufficient interest to report.

History.—Soon after the birth of a full term girl, born in normal labor with a birth weight of 7 pounds, it was noticed that mucus ran from the baby's nose and mouth, and that apparently she could not swallow water given her and regurgitation through the mouth and nose occurred, associated with severe coughing and an extreme blueness of the skin. During these three days before the baby came under our care, there were apparently numerous meconium movements.

Physical Examination.—The baby was rather poorly nourished but fairly well developed. The skin was dry from the loss of water but not yet tough. There was a slight general cyanosis, especially of the finger tips. There was a more or less constant discharge of mucus from the nose and mouth, both stringy and containing air. There was a unilateral harelip and a complete cleft palate of the same side

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* From the Durand Hospital of the Memorial Institute for Infectious Diseases.

[1] Hektoen, L., and Rappaport, B.: The Use of Kaolin to Remove Bacteria from the Throat and Nose, The Journal A. M. A., June 12, 1915, p. 1985.

* From the Children's Orthopedic Hospital.

* Read before the King County Medical Society, October, 1915.

The separation involved the alveolar process and the hard and soft palates

The heart, lungs and abdomen were apparently normal A small mouth feeding of water was immediately regurgitated, bringing about a severe attack of coughing with cyanosis

On passing a No 14 (F) Hess duodenal catheter definite obstruction was encountered 11 5 cm from the mouth At this age the normal distance from the mouth to the cardiac end of the stomach is about 17 cm

The diagnosis of congenital obstruction of the esophagus was now definitely established

Operation—A gastrostomy was performed on the fourth day of life in order to feed the baby artificially A small sized rubber catheter was fastened into the stomach and brought out through the left rectus incision Shortly after the operation it was noted that when more than a teaspoonful was run into the stomach an attack of coughing and strangling would come on as had previously been produced by attempts t feeding by mouth After even larger stomach feedings milk was seen to run out of the mouth

The infant became progressively weaker and died on the seventh day

Necropsy—The upper end of the esophagus ended in a blind pouch 3 3 cm below the epiglottis With gentle traction this pouch could be elongated to 4 cm The diameter was uniformly about 1 cm The lower portion of the esophagus extended definitely from the bifurcation of the trachea to the cardiac end of the stomach This portion was about 3.5 cm long and at the bifurcation communicated directly with the trachea Between the upper and lower portions there was only a fibrous band

There are several different types of congenital obstruction of the esophagus This is the common or 'inosculating" type, in which the upper portion ends blindly in a dilated pouch and the lower portion passes from the stomach into the trachea The frequency of this type suggests a uniform embryonic origin It is not uncommon, as in this case, to find associated defects in development, such as harelip and cleft palate In view of the difficulty we encountered in feeding through the gastrostomy opening, as indicated by coughing up of the milk placed in the stomach, a jejunostomy would seem better suited for this condition

The outlook at best is hopeless Operative procedure only postpones the fatal termination, since there is little likelihood that a plastic operation on the middle of the esophagus would be possible on a baby of this age

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Milk of Immunized Cows in Tuberculosis—A committee of New York physicians including Dr Haven Emerson, the commissioner of health, in 1915 made an investigation of the suggestion of Rosenberg that cows might be immunized against tuberculosis and that their milk would benefit persons with tuberculosis Rosenberg suggested that the milk of cows treated with tuberculin contained antibodies which would be absorbed from the intestines of persons taking such milk The two questions the absorption of antibodies from the intestine and the production of antibodies by the vaccination of cattle with tuberculin, were studied by the committee They found that antibodies were readily absorbed from the intestine during the first few weeks after birth, but they did not consider it proved that they would be absorbed after the first two or three months of life The production of antibodies was attempted by the use of typhoid bacilli in a cow A cow was immunized with this organism and after a large amount of agglutinins was developed a calf several months old was fed on the milk of the cow The blood of the calf showed a slight power to agglutinate typhoid bacilli The committee concluded from their experiments that up to the present we have no evidence that the milk from cattle immunized against tuberculosis as suggested by Rosenberg, is of any advantage to those having tuberculosis

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THE FUNCTION OF THE THYROID-PARATHYROID APPARATUS *

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During the past eight years Plummer has been making an extended clinical study of thyroid disturbances in several thousand cases of hyperplastic and colloid goiters, and has gradually formulated the following basic hypotheses

1 In thyroid disturbances the effects are due to a change in the rate of a normal function

2 The stimulating effect of increased thyroid activity is not felt in any particular set of organs or tissues alone, but the stimulus is active throughout the body

3 The stimulating action is intracellular

I wish at this time to draw attention to these fundamental aspects of thyroid disturbances, since they were formulated prior to the work reported herein, and any theory of the function of the thyroid should at least fulfil the conditions Plummer outlines

Several months ago I reported the isolation from the thyroid of a crystalline substance containing 60 per cent of iodin and possessing the physiologic activity attributed to the gland My attempts to repeat the preparation of this substance were unsuccessful for fourteen months A chance observation furnished the clue that carbon dioxid is a factor of great importance in the purification This fact explained the failures of many months, led to the perfection of the method for the isolation of the substance, and threw much light on the structural formula of the compound

The method of separation and final purification of the crystals strongly suggests that the bond linking the iodin compound to the protein constituents is through an amino group, and that the purification is effected by the entrance into the iodin compound of carbon dioxid in place of the amino group

At the time of the first isolation of the crystals, the solubility of the substance in sodium hydroxid and its insolubility in sodium carbonate suggested that we were dealing with phenol groups and not carboxyl I, therefore, suggested as the possible formula for the substance di-iodo-dihydroxy-indol The more recent work on the structural formula makes it appear to be carbonic acid in which one of the hydrogens is replaced by di-iodo-indol

The chemical behavior of the compound throughout the course of its purification corroborates this hypothetic structure, but sufficient work has not been done to make it certain If further work confirms present indications that there is present a CO_3H structure, and that this may easily be replaced with the amino (NH_2) group, it will strengthen the following hypothesis for the physiologic activity of the substance

Under proper conditions, the interaction of the amino group of an amino acid and the CO_3H group of the iodin compound results in a transfer of the carboxyl (CO_2H) group from the iodin compound to the amino acid, and of the amino group from the amino acid to the iodin compound In the presence of carbon dioxid there is another exchange between the amino group now attached to the iodin compound and carbon dioxid, the result being the reformation of the iodin compound with the carboxyl structure and the removal of the amino group in combination with carbon dioxid The iodin compound has entered into combination, allowed the reaction to take place, and has been regenerated in its original form without alteration or destruction

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* From the Mayo Clinic

The amino group removed from the iodin compound and joined to carbon dioxid is a by-product of the reaction, which in the presence of water, of course, exists as ammonium carbonate Without entering into the details of this reaction, the net result is the deamination of the amino acid

When protein is catabolized in the body, nitrogen is not excreted as ammonium carbonate but appears chiefly in the form of urea Some mechanism must exist for the conversion of the ammonium carbonate resulting from deamination into urea It is known that after parathyroidectomy the ammonium content of the urine is increased, and it has been suggested that the tetany following parathyroidectomy is due to this increase in ammonia The acid radical to which the ammonia is attached has not been determined, but it has been shown that soluble salts of barium, strontium, calcium and magnesium relieve the tetany following parathyroidectomy, and it has also been shown recently that the tetany is controlled by the injection of acids[1] The only salt of ammonia which can react with all five of these reagents forming a nontoxic compound is ammonium carbonate From the results of previous investigators, it seems probable that ammonium carbonate is responsible for the tetany following parathyroidectomy, and *it is here suggested that the function of the parathyroid is to convert ammonium carbonate into urea* The production of urea has not been shown to be confined to any one special organ, and it has been pointed out that in all probability it is produced throughout the entire body[2] If the thyroid secretion is the catalyzer controlling the rate of deamination of amino acids, and the parathyroid furnishes the mechanism for the conversion of the so formed ammonium carbonate into urea, then urea (and ammonia) output by the body is within certain limits a measure of thyroid-parathyroid activity It is apparent that in a sphere of reaction wherein proper conditions exist for the deamination of amino acids, all other conditions being constant, the speed of the exchange of the amino group for carbon dioxid is directly controlled by the amount of the iodin compound present, and that in the entire absence of this substance, although amino acids are present, no action can take place

The above suggested principles furnish a means for the study of the factors controlling the activity and the manifestations of animal life No complete hypothesis can be formulated at this time, when many other factors remain so obscure, but the process occurring in the normal animal may be outlined as follows The body proteins are decomposed to a slight extent into amino acids These, under proper conditions and in the presence of the iodin compound, are deaminized, and the products of this reaction are then burned either directly into carbon dioxid and water, or are used for the formation of carbohydrates, fats, etc If, for any cause, an increase in the amount of the iodin compound in the cell is brought about, the speed at which this reaction takes place is increased, the equilibrium between proteins and amino acids is disturbed, more amino acids pass into the reaction, and ultimately, the proteins unless replenished, are exhausted At the same time, the products of the reaction, deaminized acids, are formed in increased amount This results in an increased speed of the processes of oxidation and the formation of carbohydrates and fats The delicately balanced relations between proteins, carbohydrates, fats and oxidation are, therefore, affected at a vital point since the equilibrium of the entire body is changed and the speed of reaction of all body functions is increased

The presence of the deaminizing catalyzer does not affect the mechanism of the formation of body proteins from foreign proteins, or the decomposition of body proteins into amino acids There is no direct change in the mechanism entering into the metabolism of carbohydrate and fat formation and oxidation The only thing which is influenced is the rate at which deamination occurs If this hypothesis be correct, *we may conclude that the function of the thyroid is to furnish a catalyzer which regulates the rate of deamination*

Woodyatt, from a study of chemical dissociation and the equilibrium existing in the body, has already suggested that "the thyroid may be concerned with the dissociation of amino acids or polypeptids derived from the breakdown of protein " The function of the gland presented in this paper is in entire accord with this hypothesis, and furthermore shows at just what point this influence is exerted

Having outlined the function of the thyroid-parathyroid apparatus under normal conditions, we may follow the effects of an excessive secretion The presence in the cells of an increase of the iodin compound produces a condition precisely similar to that found during violent exercise It is simply an increased rate of the normal functions of the body An increase of from 200 to 300 per cent in the rate of metabolism has been found in cases of exophthalmic goiter This is going on at a temperature maintained but slightly above normal, and it is apparent that the usual controlling mechanism for temperature regulation is not broken down However, at death from exophthalmic goiter, a crisis is frequently seen in which the controlling mechanism does break down, the temperature reaches 106 or more, and metabolism apparently runs wild Stated another way, we are normally living at a rate of from one-third to one-half our possible capacity Some of the factors other than the iodin compound controlling the rate of protein metabolism are probably the rates at which proteins are converted into amino acids and the rates of removal of the products of deamination

The other extreme of cell activity is found in myxedema Here metabolism is at a minimum It is probable that the amino acids and proper conditions for their deamination are present, but the catalyzer or vehicle by which this process is brought about is present in too small an amount to supply the normal demands There is no more striking result in therapeutics than the change produced in a patient suffering from myxedema by thyroid administration The entire absence of the iodin compound from cells would mean a metabolism at zero rate, in other words — death

The catalytic activity of the thyroid secretion is probably a function carried on within the cells of the body The life and activity of every individual cell is dependent on the amount of the iodin compound in it It is obvious that during different periods of rest and activity the organs require varying amounts of the iodin compound We can, therefore, assume that the function of the thyroid is not only to elaborate this substance, but also to supply the cells of the body with the amount necessary to meet the momentary demands of each cell But after cell activity has been heightened by an increase of the amount of the iodin compound present, there must be some mechanism for the subsequent removal of some of the catalyzer from the cells and for carrying it back to the thyroid, there to be held until again demanded The vehicle for carrying the iodin compound from the gland is probably the colloid found in the thyroid secretion It is suggested that the balance between free amino acids and colloid may be the mechanism governing the supply and demand for the catalytic substance Previous investigators have produced hyperplasia in lower animals and fish by feeding a protein diet[3] The presence in the blood of abnormal amounts of amino acids may be a stimulus to the activity of the thyroid

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[1] Wilson, D Wright, Stearns, Thornton, and Janney, Jr, J H The Effect of Acid Administration on Parathyroid Tetany, Jour Biol Chem, 1915, xxi, 169

[2] Folin, Otto, and Denis W Protein Metabolism from the Standpoint of Blood and Tissue Analysis, Jour Biol Chem, 1912, xii, 141

The clinical picture seen in the group of cases pointed out by Plummer as toxic nonexophthalmic resembles the condition which results from the overstimulation of the gland as produced by Cannon, and from thyroid feeding This clinical group probably represents the maximum effect which it is possible to produce by direct stimulation of the glands through the nervous control In these cases it is probable that the mechanism converting proteins into amino acids is not disturbed There simply is an increased rate of deamination, resulting in what may be called a "pull" on the proteins to supply more amino acids In contrast to this is the greater rate of metabolism seen in exophthalmic goiter The stimulus in the first group of cases may have been direct on the thyroid, the stimulus in the exophthalmic group of cases may come from an increase of amino acids due to a disturbance in the mechanism converting proteins into amino acids This would result in what may be called a "pull" on the thyroid for an increased activity, driving it, as Plummer has suggested, through the hypertrophic and colloid stages into the hyperplastic condition The latter condition, once established, is a vicious circle

If the foregoing hypothesis of the function of the thyroid-parathyroid apparatus proves tenable, its application to the explanation of biologic phenomenon is apparent, but further elaboration of the hypothesis will not be attempted until after a quantitative study of the factors involved

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[3] Bensley R R The Influence of Diet and Iodides on the Hyperplasia of the Thyroid Gland of Opossums in Captivity Am Jour Anat 1916 xix 57 Marine David, and Lenhart C H Further Observations and Experiments on the So Called Thyroid Carcinoma of the Brook Trout (Salvelinus Fontinalis) and its Relation to Endemic Goiter Jour Exper Med 1911, xiii 455

Professional Dishonesty—Conventional dishonesty of professional dealing which more than anything else is consequent upon a disposition to follow the line of least resistance, is of far greater significance and gravity This is the field in which the eminently respectable, highly successful, intensely popular physician can find his fullest scope without being personally challenged either by his neighbor or by himself The results of his deviating are remote and indirect and largely detached from his personal relations In the aggregate, however, they constitute the factor of instability in the structure of professional reliability and value—Henry B Favill, *Pennsylvania Med Jour*, November, 1915

STRANGULATED FALLOPIAN TUBE, OVARY AND INTESTINE IN AN INFANT

GEORGE ABELIO, M D

CHICAGO

Inguinal hernias, the contents of which consist of the fallopian tube or ovary, or both, are not common The association of the internal genitalia with intestine in a hernia in a strangulated condition, if not a surgical rarity, is an interesting condition Hence, the report of this case

An excellent summary of the entire English, French and German literature on the subject of ovarian, tubal and tubo-ovarian hernias, covering the period of 1890 to 1910, is given by Heineck[1] I have attempted to collect instances reported since 1910, up to date Simple inguinal hernias of the fallopian tube are recorded by Tourneux[2] and Giuliano,[3] while Cessare,[4] Humbert[5] and Rabinovitz[6] report inguinal hernias, the contents of which were the ovaries The latter's case was of unusual interest, occurring in a woman of 35, being a double ovarian hernia associated with total absence of uterus and a rudimentary vagina Petit de la Villeon[7] records ovarian hernias in two infants A strangulated ovarian hernia,[8] torsion of an ovarian pedicle[9] in an inguinal hernia, strangulation of a fallopian tube[10] in a hernia, a suppurating inguinal ovarian hernia,[11] and an ovarian hernia associated with a strangulated transverse colon,[12] these hernias with involvement of the internal genitalia, are on record

My own case, referred for operation by my father, occurred in a girl aged 11 months Breast-fed, and with no febrile or diarrheal disturbances of any sort, she was perfectly healthy until three months ago when a mass in the right inguinal region made itself manifest, the appearance of which was associated with apparently severe abdominal pain and vomiting Prior to this, no such mass had been noticed by the parents A local doctor accomplished reduction readily, with complete subsidence of the symptoms She had had four similar attacks since, all consisting of the rapid appearance of an inguinal mass associated with pain and vomiting Taxis was as successful in three of these attacks as in the first instance About four weeks ago the baby was brought to Dr J M Abelio with this history

A mass appeared in the right inguinal region forty hours previously, the baby began to cry as if in severe pain, vomiting set in, and had continued at times since Unsuccessful attempts at reduction by another physician had already been made She had had no bowel movement for about forty-eight hours Examination revealed a somewhat distended abdomen, not by any means tense, and a right inguinal mass, about 5 cm in diameter and elevated above the normal skin level to the extent of about 2 cm This mass was exquisitely tender and very tense Immediate operation was advised, and, after a delay of about six hours, because of indecision on the part of the parents, performed

An oblique incision above the mass displayed a well-formed, spherical, tense dark-colored peritoneal sac bulging directly forward through the external ring The sac was carefully nicked and the opening enlarged with scissors blunted on the end. The contents then came into view. These consisted of a large almond-sized mass, readily recognized as the ovary, to the postero-external aspect of which was a tiny fallopian tube. Posterior to both was a knuckle of dark-colored small intestine. Very slight traction on the intestine was made, a Kocher director inserted between it and neck of the sac and the latter nicked enough to enable reduction of the herniated viscera. Several minutes after the release of the constricting neck, the ovary had reduced about 100 per cent in size, and the intestine became a very deep red. Satisfied that there was a proper return of circulation to the involved viscera, I returned them very carefully to the abdominal cavity. The opening in the peritoneum was closed, muscle and fascia approximated to Poupart's ligament, and the lower leaf of the external oblique imbricated over this line of sutures. The skin was closed with silkworm-gut, and the whole covered with a gutta-percha collodion dressing (the gutta-percha edges being sealed to the skin with ether, a layer of gauze placed over this and held there by collodion generously applied), a very efficient protective dressing. Three hours after the operation, a copious, very foul smelling bowel movement resulted. The convalescence was uneventful.

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[1] Heineck Surg Gynec and Obst., August 1912

[2] Tourneux Rev mens. de gynec d'obstet et de pediat, viii 484

[3] Giuliano E Gazz. d osp, 1912 xxxiii 1475

[4] Cessare Ressyna dispediat Parma 1911, ii

[5] Humbert Union Med du Nord est Rheims 1914 xxxvii

[6] Rabinovitz Med Rec New York 1915 p 586

[7] Petit de la Villéon, E Jour de méd de Bordeaux, 1913 xliii 644

[8] Domenichini G Bull. de Soc med de Parma 1913 Series 2, vi 60

[9] Veau Arch de med d'Ing, 1911 p 36

[10] Caneva Osp maggiore 1913 Series 2 i, 31

[11] Waddelow, J J Lancet London, 1911 ii 760

[12] Dervaux Bull et mém Soc de chir de Paris 1911 N S xxxvii 108

25 East Washington Street.

Therapeutics

BACKACHE

(Concluded from page 741)

SACRO-ILIAC PAIN

Lumbago, lumbosacral nerve pains, uterine displacements, coccygodynia or coccyalgia, hemorrhoids and bone disease or bone tumors are not now a sufficient diagnosis to account for all the kinds of backache of the lower part of the spine. Orthopedists have long shown that backaches may come from weakness or broken arches of the feet, as suggested above, throwing the whole center of gravity so far off as to cause pain in the muscles of the back in the effort of these muscles to keep the body in proper equilibrium. They are now teaching the practicing physician, the gynecologist and the surgeon that many backaches are due to a relaxation of the sacro-iliac joints, to inflammation in these joints, and sometimes to degeneration of the bones of these joints. This kind of backache occurs most frequently in women.

It was long believed that the sacro-iliac joint was not intended to have much motion. It has been learned, however, that it has a very valuable and necessary function, and when disabled causes symptoms. These joints may suffer from arthritis due to an infection, rheumatic or otherwise. They may be disturbed by faulty posture or position, as suggested above. They often become more or less permanently injured, owing to a relaxation of the ligaments of the joint, even to long continued lying in bed, whether from a long illness, as typhoid fever, or after surgical operations, or from other illness which means much or continued lying on the back. Consequently, any patient who must be long recumbent must be frequently turned, if possible, and the bed must be flat and must not be allowed to become sunken in the center. Many an otherwise well person has iliosacral and lumbosacral backaches simply because his bed is too soft and the springs have relaxed, and he lies all night as one would in a hammock. Many an instance of this kind of backache will be entirely cured by a stiffening of the springs, or a change of bed.

These joints may be strained by a sudden twist or turn, or by direct injury in this region. Many a lumbosacral backache dates from an operation table, when the patient was long in an obstetric or lithotomy position. Great care should always be exercised during these prolonged operations that the legs are occasionally moved and not allowed to hang in a position that is of great disadvantage to the iliosacral joint. Some orthopedists believe that these joints may be injured by lifting a heavy object; others do not believe that they are thus injured. Lovett[1] does not believe that a strain of this joint is thus caused, but considers it always an attitudinal strain due to faulty positions and fatigue. Patients with this kind of backache often hold themselves more or less rigid while walking, thus tiring other muscles. They dislike to jar themselves, and the pain may radiate down the gluteal muscles into the thighs, or there often seems to be an associated sciatic nerve pain. In fact, many a case of sciatica is not benefited until a defective sacro-iliac joint is improved.

A lumbago or pain in the lumbar muscles, that is, a myalgia of the lumbar muscles, will respond readily, as a rule, to a diet without meat or a diet limited to milk and cereals, with plenty of water, and with the administration of alkalies, such as potassium citrate, 2 gm., in wintergreen water, administered three or four times in twenty-four hours, and to massage and local heat. But if the pain is due to a weakening of the sacro-iliac joint, none of these treatments will be curative.

The only treatment which is of any avail in sacro-iliac relaxations or weakened joints is afforded by more or less immobilization by strapping over the sacro-iliac region, unless the patient rests in bed on a stiff mattress. The straps of adhesive plaster may go all the way round the body at the level of the upper part of the ilium, and may cross each other over the sacrum, or they may be run diagonally from just below the brim of the pelvis around and across the back. Each strap should overlap the other from a third to half of its width to cause good firm support. When diagonal straps are used, a firm supporting strap of adhesive should be put all the way round the pelvis.

The straps being of benefit to a person, later a proper kind of corset may be made, in the case of a woman, or a proper kind of supporting belt in the case of a man, for permanent use.

LUMBAGO

While most of these backaches of the lower part of the spine were long attributed to lumbago or myalgia of the lumbar muscles, we are now learning that only a small proportion of backaches in this region are due to this cause, and Lovett, in a study of eighty-three cases of backache, found only one due to lumbago. As just suggested in discussing the diagnosis of lumbago from sacro-iliac joint pain, the treatment there outlined for lumbago is almost invariably successful. Hot water applications are also of value, and especially hot sitz baths followed by deep massage. If the patient is rheumatic and has had joint pains, the salicylates may be given. Sometimes faradic electricity is of value in lumbago. Temporary strapping of the back up and down the spine, or in such a way as to relieve the affected muscles, always causes comfort, hastens recovery, and allows the individual to get about sooner than when stripping is not done

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[1] Lovett, R. W.: The Causes and Treatment of Chronic Backache, The Journal A. M. A., May 23, 1914, p. 1615.

BACKACHE DUE TO PELVIC CONDITIONS

Women with disorders of the pelvic organs frequently complain of backache It is often associated with painful menstruation, and is undoubtedly due to either the increased congestion in the pelvis or to an obstruction to the passage of the blood at the cervix uteri Retrodisplacement may produce backache in the sacral region, but the amount of displacement is no index to the amount of pain they will suffer Backache can be absent in marked retroversion, but is likely to be present if there are many adhesions Cervical erosions and lacerations, inflammation of the uterus and ovaries and tumors of the uterus and ovaries may all be causes of lumbosacral, but principally sacral backache

It is hardly necessary to declare that no lumbosacral backache in a woman should be treated without a careful pelvic examination having been made and without the knowledge that a pelvic disturbance may be the cause of the backache A correction of these conditions will be the only means of relieving such a backache However, it should not be forgotten that a patient may have other causes of lumbosacral backache, even if a pelvic disturbance is present Consequently, the same physical examination of the feet, legs and back should be made as though no pelvic disturbance were present

BACKACHE DUE TO ABDOMINAL CONDITIONS

Pathologic conditions of the kidney may cause pain to be referred to the lumbar region The most frequent kidney causes are calculi, pyonephrosis, perinephritic abscess new growths and floating kidney While many floating kidneys cause no symptoms, sometimes a kidney that is only slightly loose may cause distinct symptoms and pain referred to the back Examinations of the urine, especially when obtained by catheterization of the ureters, will reveal the presence or absence of pus, and generally of a calculus, and roentgenoscopy will almost always clear up the calculus question If a calculus is present in the pelvis of the kidney causing backache, pain will also be generally referred down in the direction of the ureter to the bladder, and in the male to the testicle, which immediately shows that the backache is purely secondary to the other condition A constant study of all the urine passed for a few days, and observation of the temperature, will reveal the presence of pus in the kidney The treatment of these conditions is, of course, surgical

A floating kidney causing pain may be kept in position by a proper abdominal belt If it still causes pain and symptoms, it should be fixed by operation

A pendent or very obese abdomen may cause the patient so to change his normal posture as to produce backache Abdominal supports will help in such a case Ptosed abdominal organs may cause such dragging on ligaments as to give backache, again, abdominal bandages and proper supporting corsets will relieve the strain on the back muscles, allowing the patient to assume a more normal posture while walking and standing

Impacted feces in the colon, abdominal and rectal growths, and syphilis of the spine are all occasionally causes of backache, and of course, except in syphilis, treatment of the back is futile

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SATURDAY, MARCH 11, 1916

CANCERS IN ANIMALS

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it has not been possible to secure any evidence
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re are no indications that the growths from which
is obtained ever spread by contact The nature of the neoplastic agent in these filtrates is not understood

Then there are tumors with which are associated closely certain large parasites Thus Borrel demonstrated cestodes and nematodes in adenocarcinoma of mice, and in the adjoining tissues, while Fibiger observed the development of carcinoma in the stomach and intestines of rats which were fed with cockroaches containing the ova of a nematode obtained from a tumor in the stomach of a rat In this class might well be placed also the papillomatous growths in the bladder and rectum of man that develop in association with the eggs of *Bilharzia haematobia* These are highly interesting relations, but of course they do not justify the assertion that all the tumors in question are directly and truly of infectious origin, and far less that cancers in general are of parasitic nature

Still another example of what look like malignant tumors in animals with infectious features is furnished by the remarkable nasal tumors in cattle and horses recently described by Stenstrom[1] as occurring in endemic form in certain parts of Sweden The essential facts are these In 1908 there developed on a farm near Stockholm what is best described as a malignant growth in the nasal passages of a cow During the next six years nineteen additional cases of the same kind developed on the same farm, eight of them in 1911 These twenty cases occurred in a herd of 160 animals, that is, 12 5 per cent developed the disease During the four years ending with 1914, seven cases of the same sort appeared on the same farm among the stock of twenty-four horses, the stable adjoining that of the cows Two cows were sold in 1908 and taken to another farm hitherto free from the disease Later these animals developed the disease, and in the course of the next four years four other cases appeared on the second farm In 1912 eight cases developed on a third farm without any evident relation to the disease elsewhere

The disease caused obstruction of the nasal passages, atrophy of the bones of the skull, emaciation, and in some cases exophthalmos In practically case
the growth developed in the region of t noid
bone and generally invaded the neighbori es
The rate of growth was slow, but even id-
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as definitely carcinomatous, but sarcomato s
were also present In 17 per cent of the co
tases formed, usually in the regional lym
occasionally also in the lungs A variety c
were present, a gram-positive bacillus,
B pyogenes bovis, was present constantly
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regards the disease as unquestionably infectiou

Other examples of the endemic occurrence
growths in animals might be cited, notably
thyroid in trout in hatcheries, but in this ca
metrically opposed differences of opinion are
to the nature of the growth

What are we to concl spect to St
observations? Does acce
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would not be proof that the sarcocarcinoma des
by Stenstrom is infectious, the only acceptable p

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[1] Stenström Communications de l'Institut de l'Etat a Stockholm 1914, v

is production of tumor by inoculation with a transmissible agent. Who would venture to deny the possibility that some day this will be done in the case of some one of the forms of growth now classed as cancer?

THE EMETIC ACTION OF CERTAIN DRUGS

Nearly all substances which produce a marked irritation in the upper gastro-intestinal tract are likely to induce vomiting. Under these extreme conditions the emesis represents a useful protective device of the organism, evidently intended to expel the offending substance from the alimentary canal. Quite aside from such more exceptional cases of local attack on the mucosa of the stomach and intestine, a variety of drugs used even in comparatively small doses provoke the act of vomiting as well as the attending or premonitory symptom known as nausea. Some substances, like the familiar apomorphin, act as emetics after introduction subcutaneously into the body as well as by oral administration. To explain this on the assumption of a purely localized stimulation within the gastro-enteric canal it is necessary to assume that the injected drug is actually secreted into the lumen of this tract.

The hypothesis of an irritant action on the alimentary mucosa is not the only one which may be fashioned to explain the emetic action of drugs. It is also plausible to postulate a central action exerted by the drugs on what has been designated as the vomiting center. As prominent pharmacologists have recently pointed out,[1] whether or not there is an actual anatomic nerve center presiding solely over the act of vomiting is still a matter of dispute, but the evidence seems overwhelming for the belief that there is some more or less specialized central nervous mechanism, possibly merely of a coordinating nature, which does control the act of emesis. The determination of the precise mode of action of emetics, that is, whether they initiate the vomiting act through an effect on a center in the higher nervous structures, or reflexly through an ultimate irritation of the peripheral mucosa of the alimentary tract, is of considerable importance. Nausea and emesis are undesirable incidental symptoms obtained in the use of certain drugs, notably morphin. To combat them rationally it is essential to know the point of attack. Furthermore, inasmuch as nausea is attended with an accentuation of mucous secretions and possibly also with a relaxation of the *tonus* of the bronchial musculature, emetics employed in a dosage just sufficient to induce these preliminary effects without vomiting tend to facilitate expectoration from the respiratory passages. The pharmacology of the emetics is thus somewhat interrelated with that of the expectorants, and an intelligent use of the latter in a therapeutic way also demands a knowledge of their mode of action.

If a drug produces emesis by action on a vomiting center rather than through the intermediation of the alimentary mucosa, it may be expected to manifest this effect in a smaller dose by intravenous injection than by oral administration. Furthermore, the emetic may be expected to act more promptly when given by vein than by mouth, for the intravenous path through the circulation to the central nervous system is a direct one and does not call for preliminary absorption or any indirect procedure to the gastro-intestinal membranes. It has further been pointed out by Eggleston and Hatcher[1] that if the typical phenomena of nausea and vomiting are produced in experimental animals from which practically the entire alimentary canal has been removed surgically, the seat of action must be central in character. To such criteria these investigators in the Laboratory of Pharmacology of the Cornell University Medical School have subjected a number of more or less familiar emetics or drugs exhibiting an incidental emetic action. They find that practically all alkaloids and alkaloidal drugs in common use, including morphin and preparations containing it, emetin, cephaelin, quinin, nicotin and lobelin, pilocarpin, aconitin and veratrin, ergot and apomorphin, which produce nausea and vomiting either as their chief or their side actions, do so by direct effect on the vomiting center. The smallest emetic oral dose was always larger than that required by intravenous administration, except in the cases of the ipecac alkaloids, in which the doses for the two modes of administration were practically the same. All of the drugs requiring the larger oral dose also exhibited a longer interval for the production of emesis after their administration by mouth than when given intravenously. This was also true of the ipecac alkaloids. Sodium salicylate, picrotoxin and the digitalis derivatives likewise produce nausea and emesis through direct central action.

According to Eggleston and Hatcher there may be, in the case of certain drugs with irritant properties, synergistic reflex and central actions, whereby a smaller dose by mouth may be effective than would be required for either action alone. Emetin is cited as affording an illustration of this. The possibility that some other drugs given orally may also have an irritant action on the alimentary mucosa is not excluded by the evidence in favor of the central action exhibited by them. We are told that it is probable that the ipecac alkaloids, as well as veratrin and sodium salicylate, may have this reflex action in man, at least in susceptible individuals.

In these valuable pharmacologic studies, the investigators incidentally tested the effects of some of the newer proprietary preparations of opium. Pantopon (pantopium hydrochloricum), which consists of the total alkaloids of opium in the form of hydrochlorids, was found to be "probably actually slightly more actively emetic than is to be accounted for by the morphin alone which it contains" Narcophin, which consists of the meconates of morphin and narcotin, was found "much more actively emetic than is morphin in the form of sulphate, rather than less so as claimed"

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[1] Eggleston, C., and Hatcher, R. A.: The Seat of the Emetic Action of Various Drugs, Jour. Pharmacol. and Exper. Therap., 1915, vii, 225.

There is an immediately practical aspect to the demonstration of the central action of the salicylates in producing nausea and vomiting, in harmony with earlier observations of Waddell[2] and Hanzlik[3] It is sometimes attempted to combat these familiar annoying side actions of the salicylates by the use of an excess of sodium bicarbonate or the employment of preparations which pass the stomach unchanged This has been done on the assumption of a local irritant action on the gastric mucosa giving rise to the nausea It appears, however, that emesis occurs as promptly after intravenous as after oral doses of salicylates, and it may be observed even in eviscerated animals in which none of the drug can reach the alimentary mucosa by any path whatever It is well to know the futility of a procedure based on a demonstrably wrong conception of the mode of action of such a drug

THE ADAPTATION OF THE OXYGEN CAPACITY OF THE BLOOD

The current belief in regard to the effect of residence at altitudes on the composition of the blood postulates an interesting physiologic adaptation of the organism to the decreased oxygen tension of the atmosphere at the higher levels In a general way it is most commonly explained that, as an immediate effect of change to a region of low atmospheric pressure, there is a relative increase in the red blood corpuscles due to a concentration of the blood and a diminution of its plasma Simultaneously, however, the blood-forming organs enter into a condition of increased activity, so that, after a stay of some duration at a height, both red corpuscles and hemoglobin are considerably increased in total amount

The physiologic significance of such an increase in the oxygen-carrying capacity of the blood, when an atmosphere of low oxygen tension is breathed, is obvious The differences in views on the subject relate to the details of these changes and the mechanism by which they are brought about If the adaptive response of the blood system is associated merely with a diminished tension of oxygen, it ought to be possible to imitate all of the essential features even at sea level, independent of any cosmic effects, by maintaining individuals in atmospheres of lowered oxygen content Accordingly, recent years have witnessed the production of apparatus and devices in which both animals and man can be kept for some time in an atmospheric environment that can be regulated at will In the latest of these respiratory chambers, constructed at the University of Wisconsin by Kolls and Loevenhart,[1] an ingenious apparatus has been developed in which it is possible to keep animals in a given atmosphere of oxygen and nitrogen continuously for a week or more The outfit is automatic in regard to the oxygen supply and does not require constant watching Under such conditions the accessory effects of altitude, such as excessive light, temperature changes, increased evaporation, reduced carbon dioxid tension and reduced barometric pressure can be eliminated, so as to leave only one factor in common with high altitude, namely, the reduced partial pressure of oxygen

The elaborate investigations of Dallwig, Kolls and Loevenhart[2] with the respiration chamber described show that a decrease in the oxygen tension of the respired air obtained by decreasing the oxygen concentration at atmospheric pressure or by reducing the barometric pressure stimulates the bone marrow and increases the erythrocytes and hemoglobin in the circulating blood in animals From five to seven days are required for the increase in the blood count to become marked, but the maximum increase requires a longer exposure

Increased blood counts obtained under conditions of diminished atmospheric pressure have in the past sometimes been attributed to concentration of the blood The Wisconsin experiments show, however, that the results observed by Dallwig, Kolls and Loevenhart cannot be due to increased evaporation of water from the subjects The weight records of the animals showing a gain in some cases coincident with a marked increase in erythrocytes speak against such an influence The results clearly indicate that the increase in erythrocytes as well as hemoglobin is absolute and not relative Comparisons of the composition of blood in superficial vessels with that from the carotids or heart showed further that the differences were within the limits of error, so that an altered distribution of the erythrocytes in the large and small vessels could not account for the higher counts

It has been possible in some cases to increase the total hemoglobin per kilogram of animal 43 per cent In order to produce these effects, the oxygen pressure in the respired air must be reduced at least to approximately 14 per cent of an atmosphere The optimum oxygen pressure for increasing the oxygen capacity of the blood is apparently not far from 10 per cent of an atmosphere Examination of the bone marrow of the animals kept under conditions of decreased oxygen supply showed macroscopically a disappearance of the fat and an extension of the red marrow, and microscopically a marked hyperplasia of the erythrocyteforming centers and an equally marked dilatation of the capillaries and small vessels of the marrow, which were engorged with blood. The picture is practically identical with that seen after hemorrhage, except for the engorgement of the vessels, which is not seen in the latter condition. It has not been possible to produce depression of the bone marrow by decreasing the oxygen supply. Stimulation results even when the oxygen pressure falls to 6 per cent. of an atmosphere. It is possible to stimulate the bone marrow to a certain extent by increasing the carbon dioxid tension of the respired air, but it is not an efficient stimulus. A comparison of the respiratory center and the bone marrow in their reaction to a decreased supply of oxygen and an excess of carbon dioxid shows that they are practically equally sensitive to oxygen want, but that the respiratory center is far more sensitive to carbon dioxid than is the bone marrow.

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[2] Waddell, J A A Comparative Investigation of the Effects and Toxicity of Sodium Salicylates of Natural and Synthetic Origin, Arch Int Med, December, 1911, p 784

[3] Hanzlik, P J A Study of the Toxicity of the Salicylates Based on Clinical Statistics, The Journal A M A, March 29, 1913, p 957

[1] Kolls, A C, and Loevenhart, A S A Respiratory Chamber for Small Animals, Am Jour Physiol, 1915, xxxix, 67

[2] *Dallwig*, H C, Kolls, A C, and Loevenhart, A S The Mechanism Adapting the Oxygen Capacity of the Blood to the Requirements of the Tissues, Am Jour Physiol, 1915, xxxix, 77

In discussing the mechanism of the stimulation of the bone marrow in atmospheres of low partial pressure of oxygen, whether at atmospheric pressure or at reduced barometric pressure, Loevenhart and his collaborators point out that the stimulation shown by the bone marrow in response to decreased oxygen supply is by no means unique. Similar reactions are to be seen in the respiratory, vasoconstrictor and cardio-inhibitory centers, and the mechanism is in all cases probably identical. They point out that the external respiration, the circulation and the bone marrow are the three physiologic mechanisms which maintain the chemical environment essential for tissue respiration. The respiratory movements are controlled by the respiratory center; the oxygen capacity of the blood is controlled certainly in large part by the activity of the bone marrow.

NEPHRITIS IN THE BRITISH TROOPS IN FLANDERS

War affords opportunity for the medical observation of large numbers of selected persons under unusual, but fairly uniform, conditions of life. Much of the information gained during the present war has concerned the epidemiology of infectious disease and the complications and treatment of wounds. Recently John Rose Bradford[1] has indicated that other departments of medicine may profit by the medical lessons of the war.

Beginning in March, 1915, and continuing thereafter, there were admitted to hospital a large number of soldiers suffering from nephritis characterized by moderate dropsy, frequent dyspnea and bronchitis, and sudden onset, often complicated by uremic manifestations and epileptiform seizures. The urine was scant, and contained large amounts of albumin and casts. The course was unusually short, and terminated in rapid recovery with prompt subsidence of the edema within a few days. In these patients there were no evidences of previous cardiovascular or renal disease, and the mortality was extremely low as compared with that of acute nephritis in civil practice. The waxy appearance of the face, and the pallor of the usual picture of acute nephritis were absent. Inflammatory complications were extremely rare.

The chief differences between these cases of acute nephritis and those seen in civil practice were the rapid subsidence of the dropsy, and the extremely low mortality. In casting about for the cause of the disease, Bradford adduces a number of facts of interest. Up to March, 1915, nephritis was rare among the troops, although there were many instances of frost bite and other exposure previous to this time. Possible infectious causes were carefully sought for, but in only 10.4 per cent. could a history of severe "cold," diarrhea or sore throat be obtained. About 30 per cent., however, gave a history of bronchitis, and had signs and symptoms of bronchitis, at the onset or during the course of the illness. Mild pulmonary infection might be regarded as an important etiologic factor, were it not for the fact that the Indian troops suffered extensively from bronchitis, but nephritis was extremely rare among them.

The extreme degree of exposure to cold and wet, to which many of these men were exposed, would offer a reasonable cause were it not for the fact that a number of hospital orderlies and others less exposed suffered from the same clinical form of renal disease. Age and length of service with the expeditionary force seemed to have no relation to the incidence of the illness. Bradford is inclined to the theory of a mild infection as the chief factor in the causation of the malady.

From the physiologic standpoint, the clinical picture described by Bradford suggests an acute edema, involving the kidney, giving rise to sudden and quickly subsiding dropsy, and the brain, causing apathy, drowsiness and epileptiform seizures. It is perhaps futile to speculate as to possible causes of such physiologic disturbances, other than those suggested by the facts submitted in the report. It would seem possible, however, that abnormalities in diet, under the stress of the campaign, might result in a loss of normal balance of the salts of the body, and, combined with the unusual exposure, give rise to temporary acidosis and edema of the kidney. The absence of renal disease of this type among the Indian troops may have some bearing from this angle. In favor of the infectious theory, it may be urged that in persons under such severe physical stress, resistance to infection is necessarily lowered, and bacteremia may possibly result without external clinical signs. Finally, in comparing the short course and low mortality of these cases of acute nephritis with the more serious cases in civil practice, we must bear in mind that we are here dealing with a selected group of previously healthy young adults who might be expected to return more quickly to normal, after the removal of unfavorable influences, than would a like number of unselected members of a civil population

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[1] Bradford, J. R.: Nephritis in the British Troops in Flanders, Quart. Jour. Med., 1916, ix, 125. Paris Letter: Acute Nephritis Among the Troops in the Field, The Journal A. M. A., March 4, 1916, p. 752.

IMMATURE VEAL AS FOOD

Veal is the meat of calves which, under the United States meat inspection regulations, must be not less than three weeks old at the time of slaughter Meat of calves less than three weeks old is popularly known as "bob veal" In Europe no objection is raised to the use of veal from younger calves, and it is stated that in Germany they are commonly slaughtered at from three days to three weeks of age[1] The regulation which is in force in this country reflects a widespread belief that the meat from very young calves is, for some reason, unfit for human consumption Veal is in general valued less highly as a dietary product than beef, and the younger the animal the less valuable its flesh is considered to be Accordingly American textbooks on dietetics speak of veal as tough and indigestible, "especially when obtained from animals that are killed too young" Veal has been charged with a tendency to produce indigestion, and diarrhea has been described as a symptom of the unwholesomeness of "bob veal"

The attempt to marshal the evidence on which these serious charges are based and to follow the implications of harmfulness to their sources proves to be almost futile The Bureau of Animal Industry, which has long been interested in the question of the digestibility and wholesomeness of different kinds of meat, has not been successful in tracing the basis for the currently expressed views The biologic chemist of the pathologic Division, Dr W N Berg,[2] states that the argument has been offered that the metabolism of the fetus and of the newly born is different from that of older animals, and that there is a possibility of toxic substances being present in embryonal or young tissues, which substances, though present in amounts too small to be detected by analytic methods, may be very powerful in their action on the consumer of very young meat, or, as is sometimes alleged, the newly born animal does not excrete its metabolic end-products fast enough, with the result that its tissues are loaded with waste material The polypeptid nitrogen which passes unused through the assimilatory system of the fetus or of the newly born, however, is not significant If by any chance the tissues of a very young calf happened to retain some of its own metabolic products because of retarded excretion or from any other cause whatsoever, so long as the animal was normal otherwise there would be practically no danger to the consumer of such meat from poisonous end-products of protein breakdown But the tissues of very young calves are not loaded with unexcreted nitrogen The data obtained on this point are direct and conclusive

In an extensive investigation undertaken to ascertain whether the flesh of calves three weeks of age and under is or is not fit for human food, Berg compared the chemical composition of mature beef with that of immature veal No differences between them that are dietetically significant were detected The average water content in beef and veal was 74 and 77 per cent, respectively, but Berg points out that such differences are physiologically of no importance As so much emphasis has been placed on the relative indigestibility of veal, it is interesting to note that in a large number of artificial digestion experiments conducted under rigorous scientific control, immature veal digested as fast as mature beef

The foregoing facts are further substantiated by direct feeding experiments, not only under ordinary conditions of maintenance and growth, but also during periods of reproduction, which must be regarded as the severest test of dietary efficiency Berg found that when animals were fed on a diet in which immature veal was the sole source of nitrogen, the young grew normally, and the older ones became fat A pair of animals, after living two thirds of a year on the diet, produced a litter of healthy young which, after the nursing period, in turn continued on the immature veal diet with excellent growth

Corroboratory experiments on human subjects are not wanting Professor Fish[3] of Cornell University conducted dietetic experiments in which seven families of twenty persons of various ages received immature veal as part of their diet All partook of the veal and appeared to relish it None of the families reported any disturbance of any of the bodily functions, the health was apparently normal and each family was ready to receive a portion whenever another carcass was available The claim that the flesh of very young animals has a laxative effect on human beings could not be verified

In the light of all the negative findings and the indefinite and unverified character of the statements on record it is not easy to justify or understand the current embargo on very young veal The work of the investigators who have given serious attention to the subject indicates, in the words of a government publication, that immature veal, when properly prepared, is fit for human food, especially when its deficiencies in fat and possibly in small amounts of undetermined constituents are counterbalanced in the ordinary mixed diet This declaration, based as it is not only on negative contradictory evidence, furnished by the comparative analyses and artificial digestion experiments, but also on positive evidence, furnished by nutrition and growth experiments, should also have the effect of removing the proscription under which all veal and perhaps pork, too, as food, especially for the young, have rested Likewise, it relieves food chemists and physicians from the embarrassment of having to confess, in the practical world, that they do not know why veal is not so good a food as beef or mutton

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[1] Sherman, H C Food Products, New York, 1914, p 178

[2] Berg, W N Biochemical Comparisons Between Mature Beef and Immature Veal, Jour Agric Research, 1916, v, 667

[3] Fish, P A Preliminary Observations on Bob Veal, Rep N Y State Vet Coll, 1909 1910, p 130, Further Observations on Bob Veal ibid, 1910 1911, p 138, Bob Veal and the Conservation of the Meat Supply Proc Am Vet Med Assn 49th Ann Conv, 1912, p 550 The Digestibility and Decomposability of Bob Veal, Rep N Y State Vet Coll, 1912 1913, p 51

Current Comment

THE EFFECT OF ATMOSPHERES RICH IN OXYGEN

There is a seeming incongruity in speaking of oxygen as a poison, yet it has long been known that if a warm-blooded animal be submitted to pure oxygen at a pressure of several atmospheres it will die as promptly and surely as if it were in an atmosphere of pure nitrogen Even exposures to lesser pressures of oxygen over a considerable time are attended with pathologic results, the most familiar of which are severe inflammation of the lungs, thus leading indirectly to death Karsner[1] has attempted to define more accurately the possible pathologic effects of this gas, which is being used freely as a therapeutic agent, as a prophylactic against asphyxia in anesthesia, in the industries, and in the exigencies of submarine or aerial performances His studies show that atmospheres containing from 80 to 96 per cent of oxygen under normal barometric pressure usually produce, in animals, in the course of one or two days, congestion, edema, epithelial degeneration and desquamation, fibrin formation, and finally a pneumonia, probably of irritative origin and to be described as a fibrinous bronchopneumonia Although deficiency of oxygen may affect the hemopoietic system, animals subjected to high oxygen percentages failed to reveal any demonstrable pathologic changes in the blood, spleen, lymph nodes or bone marrow, except for the presence of congestion which is accounted for in other ways

SAMUELS LOSES—THE PUBLIC WINS

The Wichita *Eagle* for Feb 29, 1916, chronicles the fact that the United States Court of Appeals has confirmed the conviction of "Prof" Henry Samuels of Wichita for using the mails to defraud Readers of THE JOURNAL will remember the Samuels case As long ago as 1910 we called attention to the outrageous swindle that this man was perpetrating on the sick in selling as a cure for practically every disease a mixture of sugar and salt in hydrant water Later, THE JOURNAL[2] gave the public the facts regarding Samuels' attempt to reestablish his mail-order business at Detroit The Michigan city made it so warm for this individual that he went back to Wichita In 1914 the postoffice officials proceeded against Samuels for violating the postal laws in obtaining money through the mails by means of false and fraudulent pretenses, and on June 1, 1914, Samuels was denied the use of the mails At the same time Samuels was indicted by the federal grand jury on criminal charges connected with this fraud, and later found guilty On March 1 1915, he was sentenced to serve one year and one day in the federal penitentiary and to pay a fine of $5 500 Samuels appealed, of course, but, according to the Wichita *Eagle* the appellate court has confirmed the findings of the lower court

"EASY MONEY" LIBERALITY

One of the favorite themes of the defenders of quacks and 'patent medicine" venders is the liberality and public spiritedness that characterize this class of citizens The Samuels case referred to in the preceding comment is in point The Wichita paper that told of the appellate court's decision had its reporter call on Samuels and apprise him of the fact In his "story" the reporter described the room in which he was received It was "beautifully appointed", it was "done in mahogany", it bore, in short, evidences of the wealth of its owner How that wealth was obtained the reporter does not describe Nothing is said of the widow whose husband had used the Samuels nostrum, and who, left alone with two little ones, wrote asking Samuels to take back the medicine that was left and refund some of the money Nothing was said of another widow whose husband "kept up with" Samuels' mixture "until the last day", she, left with three children, implored Samuels to return at least some of the money that he had received from the man now dead Nothing was said of the case of the poor man with a wife and four children who asked for a return of the $5 he had sent Samuels for his sugar and salt mixture with which to treat the eye of his little boy, obviously without results Nothing was said of the hundreds, yes, thousands, of eternally hopeful sick who threw away on a worthless mixture money that in many cases represented real sacrifices The reporter did not mention these facts, but Samuels being a "substantial citizen" of Wichita, the reporter did mention that when institutions or individuals sought charity Samuels "gave with open hands and a smile" Curiously enough, this open-handed generosity seems characteristic of the nostrum faker To civic, commercial or, more often, to religious organizations, the "patent medicine" manufacturer is always liberal Why shouldn't he be? His money comes "easy" For those engaged in a business that fails to command the respect of the public, there is nothing like indiscriminate charity to make the unthinking or shallow-thinking forget the deeper evils behind it Should the Ladies' Aid Society desire a small donation, what is simpler than to give it the $5 just received from a hopeful and credulous consumptive? Should the Home for the Friendless need help, what is easier than to turn over a money-order just received from some poor unfortunate who believes he is going to be cured of paralysis by a mixture of salt and water? Should a subscription be desired toward the erection of a new church, give liberally What if the bricks thus furnished do represent the savings of a Bright's disease victim, a morphin habitue or a blind man, sent in the hope that cure is in reach? Generosity is an admirable trait — sometimes The liberality of those who wring from the credulous sick a fortune through the sale of a worthless nostrum is not a form of charity that will appeal to decent men

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[1] Karsner H. T The Pathological Effects of Atmospheres Rich in Oxygen, Jour Exper Med 1916 xxiii 149

[2] The Samuels case is reprinted in the pamphlet "Medical Mail Order Frauds' price 10 cents published by the American Medical Association.

THE NATURE OF PEPSIN

The nature of the digestive ferments or enzymes is far from solved A generation ago they were usually conceived to be protein in nature, and the procedures selected to isolate or purify enzyme preparations were borrowed from the then current methods of protein manipulation So far as one can judge at present, the chemical nature of enzymes is probably of very different kinds There is direct evidence that some are not proteins A recent writer[1] ventures the opinion that it is doubtful if any enzymes are proteins He adds that some appear to be complex systems of colloids with inorganic components, or other simple compounds Pepsin, one of the most prominent if not the most important of the enzymes with which the medical sciences deal, is colloidal in nature, or if not colloidal itself, is attached to colloids From such investigations as have been made, it appears probable that pepsin either is a protein or is united with a protein Some students of the subject have conceived the enzyme to correspond with protein compounds of the proteose type, others have assigned to it either larger or smaller hypothetic molecular structure It has occurred to Aldrich[2] to ascertain something of the nature of pepsin and of enzymes in general by determining what relation, if any, exists between the total nitrogen, the alpha-amino nitrogen, and the strength of different samples of pepsin Of late the estimation of the alpha-amino nitrogen by the Van Slyke method in substances of protein origin has gained prominence as an analytic indication of the degree of disintegration of the protein molecule Native proteins react with only a trace of their nitrogen to this method, nearly all of the amino nitrogen being bound in the peptid linkings of the protein molecule In general, the smaller the molecule, the greater the proportion of free amino nitrogen Aldrich's examination of the products shows that there is a progressive decrease in the percentage of the alpha-amino nitrogen in the samples in the order of their strength According to this it would seem as though the method used in the purification of the pepsins gradually eliminates the simpler alpha-amino nitrogen compounds, and consequently causes an accumulation of more complex bodies in the stronger pepsins Taking it for granted, Aldrich adds, that with the still more active pepsins the recognizable alpha-amino nitrogen content will be further decreased, we should finally by sufficient purification obtain a pepsin having very little detectable alpha-amino nitrogen or an amount approximating that in the native protein The inference from this is that the more highly purified or more active pepsin products approach the native proteins in complexity

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[1] Bayliss, W M Principles of General Physiology, London, 1915, p 331

[2] Aldrich, T B Relative to the Total Nitrogen and Alpha Amino Nitrogen Content of Pepsins of Different Strengths, Jour Biol Chem, 1915, xxiii, 339

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education public health, etc)

DISTRICT OF COLUMBIA

Baby Week Campaign Plans—On the initiative of the Federation of Women's Clubs, arrangements are being made for the baby week campaign Baby Week, however, is, in the District of Columbia, to be from May 6 to 13 and will not conform to the week generally adopted throughout the country

Investigation of Milk and Milk Products Endorsed—The board of directors of the Association for the Prevention of Tuberculosis has endorsed Representative Linthicum's resolution providing for the appointment of a committee from the House of Representatives to investigate the milk supply and the milk products of the country in their relation to public health

FLORIDA

State Board News—The annual meeting of the State Board of Health was held in the new State Laboratory Building, Pensacola, February 8 A sanitary engineer was appointed and six additional nurses were employed to aid in the tuberculosis work——The health train of the board, which made its initial run to Key West and Miami early in the year, was brought to Pensacola for the meeting of the board

Hospital Items—The Hospital for Negroes at St Petersburg was opened in the building formerly used for the Samaritan Hospital, the first week in February——The West Coast Hospital Association announces that the formal opening of the Morton F Plant Endowed Hospital, Clearwater, occurred February 1, followed by an informal reception to the general public——The trustees of the Lakeland Hospital at their meeting, January 25, elected a medical and surgical staff for the institution It is expected that the work will have been so far completed that the corner-stone may be laid this month——An isolation ward for the Gordon Keller Memorial Hospital, Tampa, is urgently needed The mayor and city physician are conferring regarding ways and means for securing this addition to the institution, which is used as the city hospital——As the result of a request to the city commissioner, the Augusta Memorial Hospital, St Petersburg, named in memory of the mother of Capt E H Tomlinson, will be given another name

GEORGIA

Grady Bond Issue Endorsed—The Physicians' Club of Atlanta at its annual meeting, February 16, unanimously pledged its support to a campaign for a bond issue sufficient to meet the needs of Grady Hospital

Personal—Dr P H Raines has been appointed assistant librarian of the Georgia Medical Society, Savannah, and took up his duties, March 1 Dr Victor H Bassett is librarian of the society——Drs Joseph H Bradfield, Julius E Sommerfield, William L Gilbert, S W Foster, Joseph H Hines, Carl C Aven and Allen H Bunce have been elected members of the board of directors of the Atlanta Antituberculosis Association

Hospital News—The Henrietta Egleston Memorial Hospital for Children is to be established in Atlanta with accommodation for seventy-eight patients—fifty-three free and twenty-five pay beds Mr Egleston made an initial bequest of $100 000 for the institution, and if his estate totals $750 000, there will be an additional quarter of million available to the hospital and the final amount will be eventually about $600 000 by the reversion of annuities——Members of the Savannah Hospital corporation elected a new board of managers at the annual meeting, February 7——Drs Alexander G Little and Archie Griffin formally opened their new hospital at Valdosta, February 5

ILLINOIS

Personal—Dr John A Wheeler, Auburn sheriff of Sangamon County, who has been enforcing the Sunday saloon closing law against great odds is reported to have won a victory in the primaries last week.——Dr Harry G Wood Galesburg has started for Montreal, where he expects to be assigned to duty with the Royal Army Medical Corps in France——Dr George P Gill Rockford, returned February 25 after more than six months in overseas service in France

Epidemic Diseases—The health authorities of Elmhurst have ordered the churches, schools and moving picture houses closed on account of the presence of scarlet fever of which there are now nine cases in the village——Scarlet fever is still prevalent in Evanston——Peoria reports eighty-three cases of scarlet fever and twenty-six cases of smallpox——The secretary of the state board of health on March 1, issued a warning to health authorities throughout the state, in view of the spread of smallpox and scarlet fever The communities most seriously infected by smallpox are Peoria and vicinity Staunton Decatur Springfield Woodford and Fayette counties——Dr Charles E Crawford of the state health department located fifteen cases of smallpox in a mining settlement near Peoria on February 24 Rigid quarantine was established

Chicago

Quarantine Lifted—The smallpox quarantine of two and one half weeks at Cook County Hospital was lifted March 5

Hospital May Lose Bequest.—Alleged faulty designation of Mercy Hospital in the will of Charles H Haines St Charles may cost the institution a two thirds interest in the estate which is appraised at one-half million dollars Relatives not mentioned in the will have filed an answer to the partition suit instituted by the hospital and claim that "the Mercy Hospital of Chicago" named in the will does not exist

Personal—Dr Thomas Lewis Gilmer has been selected by the trustees of Northwestern University to fill the vacancy in the deanship of the dental school caused by the death of Dr Greene Vardiman Black——Dr Marie A Motis has been appointed health commissioner of Cicero——Dr Howard O Shafer has announced that he will give up his work in Chicago to manage the hospital established in Rochester Ind, by his father, the late Dr Winfield S Shafer

New Hospital Opened—The new Central Hospital, recently built by the Illinois Central Railroad Company at Fifty-Ninth and Jackson Park Avenue, at a cost of $360,000 was opened with formal ceremonies March 4 The guests of honor were Drs Joseph C Bloodgood Baltimore, and William A. Evans Chicago The hospital is up to date in its equipment, and while primarily intended for the use of the railroad employees, other patients will be admitted when space permits Dr Guy G Dowdall chief surgeon of the railroad, is in charge of the institution The hospital was opened to receive patients on March 5

Typhoid Fever—City water for drinking purposes was shut off at the public schools in the Sixty-Eighth Street pumping station district March 6 and will remain shut off for two or three days There have been 100 cases of typhoid fever on the south side as a result of the contamination of one of the wells connected with the Sixty-Eighth Street pumping station The water pipes are to be flushed to remove impurities The condition of the pumping station is to be corrected to prevent a recurence of the flooding of the wells——During February, 156 cases of typhoid fever were listed and twenty-four new cases during the first two days of March and the health department has repeated its warning to residents of the south side to boil all water

Free Lectures on Tuberculosis—A systematic course of lectures intended for those interested in the tuberculosis problem will be given under the auspices of the Chicago Tuberculosis Institute at the City Club of Chicago, throughout March and April, beginning March 6, at 6 30 Cards of admission to the lectures will be sent on application to the Chicago Tuberculosis Institute, 8 South Dearborn Street, or may be obtained at any of the lectures at the City Club The following is the program

Monday, March 6 "Bacteriology and Pathology of Tuberculosis Dr Harry J Corper, Laboratory Director Municipal Tuberculosis Sanitarium

Monday, March 13 'Sources and Channels of Tuberculous Infection' Dr Walter A Gekler, Associate Medical Director, Municipal Tuberculosis Sanitarium

Thursday March 16 'Prevalence and Distribution of Tuberculosis' Dr Theodore B Sachs President The Chicago Tuberculosis Institute and Municipal Tuberculosis Sanitarium

Thursday, March 23 'Tuberculous Infection in Childhood" Dr Orville W McMichael Head Physician Municipal Tuberculosis Dispensary Chicago Policlinic

Monday March 27 Contributory Factors in the Development of Tuberculosis Personal and Public Hygiene Dr John Ritter, Head Physician Municipal Tuberculosis Dispensary Rush Medical College

Monday April 3 Contributory Factors in the Development of Tuberculosis Industrial Hygiene" Dr James A Britton, Associate Medical Director International Harvester Co

Thursday April 6 Schools and Tuberculosis" Sherman C Kingsley, Director Elizabeth McCormick Memorial Fund

Monday April 10 Present Status of Medical and Specific Treatment of Tuberculosis" Dr Ethan A Gray, Medical Director, Chicago Fresh Air Hospital

Thursday April 20 Hospital Sanatorium and Dispensary Control of Tuberculosis' Dr John W Coon, Superintendent Municipal Tuberculosis Sanitarium

Monday April 24 City Program for the Control of Tuberculosis" Mr James Minnick, Superintendent, Chicago Tuberculosis Institute

INDIANA

Medical Library for Gary—Members of the Gary Medical Society are planning to establish a medical library At a recent meeting it was decided that each member should donate $10 a year toward the library, an equal amount to be given by the library board The public library will give a separate room for the use of the library of the medical society

Contract Let this Month—Work on the Marion County Tuberculosis Sanatorium to be built near Oaklandon will be started early in April the contract being let this month The building is expected to cost about $70,000 The first buildings to be erected will be an administration building with two wings one for male and the other for female patients The plans at present projected provide for the accommodation of eighty patients, but eventually the institution will be able to care for 300 patients

Typhoid in Indianapolis—Dr Herman G Morgan, city sanitarian of Indianapolis reports an epidemic of typhoid fever on the South Side The cause was attributed to a contaminated milk supply Since February 1, thirty-five cases have been reported from the southern part of the city alone Only twelve cases of typhoid were reported during the whole month of February last year Dr Morgan said that the cause of the epidemic was under control and a further spread of the disease is not expected only one case having been reported during the last three days

Fresh-Air Schools—Three teachers from the open-air schools Indianapolis talked to the social workers on "The Fresh Air School in the Antituberculosis Fight," at a recent meeting held in the rooms of the Charity Organization Society The purpose of this meeting was to explain the need of the open-air school and to keep the social workers informed as to the work accomplished by the school According to the teachers' report there have been surprising results in physical and mental strength of sick children and normal children in the schools The technical school opened last year with an enrolment of twenty-two children These children gained an average of 7 83 pounds each during the time they were in the school This year the enrolment is fifty the gain in pounds for each child has been 5 96 being decreased to some extent through the rapid gaining of normal size of those who were there last year and who returned this year The Indianapolis school board employs the teachers and has built two sleeping porches The Antituberculosis Society provided the water gas and lunches for those who cannot afford to pay for their own The society also pays car fare when the children are too poor to pay it The children in the public schools are examined by physicians and when a child is found to be suffering with a mild case of tuberculosis it is placed on the waiting list In accordance with a resolution of the city school board the parents of forty children in two consecutive grades in any school could have an open-air room if a teacher could be obtained to teach the children The restriction on opening such schools is to keep the additional expense as low as possible.

LOUISIANA

Quarantine Station to be Established—A quarantine station at or near New Orleans, at a cost not exceeding

$300,000, exclusive of the cost of real estate, is proposed in a bill introduced into congress by Representative Estopinal of Louisiana The bill authorizes the secretary of the treasury to receive on behalf of the United States such real estate as may be donated for the purpose of enabling them to carry into effect the provisions of the act

MARYLAND

Clinic for Carolina Surgical Club—The hospital of the University of Maryland held a series of clinics on March 2, before the North Carolina Surgical Club, those participating being Drs Randolph Winslow, John M Hundley, Arthur M Shipley, Robert P Bay and Fred W Rankin The North Carolina Surgical Club is a traveling organization and the visit to the clinics in Baltimore is part of its present itinerary

To Honor Winslow—Arrangements are being completed for the commemoration of the twenty-fifth anniversary of Dr Randolph Winslow as professor of surgery at the University of Maryland The celebration will take the form of a dinner The committee of arrangements includes Drs Wilbur P Stubbs, William Tarun, G Milton Linthicum, Alexius McGlannan, Arthur M Shipley, Elmer Newcomer and Fred W Rankin

Child Welfare Week in Baltimore—Child Welfare Week, which is being conducted throughout the country, was officially opened in Baltimore, March 4 Pushed originally by the State Federation of Women's Clubs, the local observances represent nearly every educational, medical and social service organization in the city The Medical and Chirurgical Faculty has cooperated by arranging its sixth annual health conference to be held the same week, so that speakers might include the baby welfare movement A feature of the celebration is the exhibit of hundreds of posters that have been made for the Better Baby Poster Contest Every visitor will be entitled to a vote in deciding the winners of the three prizes offered

MASSACHUSETTS

Chiropodists' Bill Defeated—At a session of the senate on February 3, a report of the Committee on Public Health against the registration of chiropodists was accepted without discussion

Preparedness in Harvard—More than 100 students of Harvard Medical School have been enrolled to work in cooperation with the Harvard regiment The unit will pursue a regular course of instruction in sanitation, medical administration, first aid and discipline It has also planned to form an ambulance corps

Tech Man Appointed Chief Sanitary Engineer—George W Simons, Jr, assistant to the head of the Sanitary Engineering Department of Harvard Medical School and Massachusetts Institute of Technology, has been appointed chief sanitary engineer to the State Board of Health of Florida, and will take up his new work on July 1

Plan to Send Milk to European Babies—The Massachusetts Branch of the Citizens Committee for Food Shipments has scattered broadcast circulars stating that 5,000,000 babies in Germany and Austria-Hungary are suffering from want of milk, that $1 will supply a baby for a week and that $1,000 will establish, operate a good-sized milk depot and keep 100 babies alive and well for ten weeks, and asking contributions for this philanthropic work

Personal—Dr Henry S Forbes, Boston, who has been interned by Bulgarian authorities in Monastir, was released, March 6——Dr Frederick Herman Verhoeff has been made assistant professor of ophthalmic research, Dr Elliott Gray Brackett, assistant professor of orthopedic surgery, Dr Clifford Black Walter, assistant in ophthalmology, Dr Robert Louis Levy, assistant in physiology, and Dr George Richard Minot, assistant in chemistry at Harvard Medical School

Milk Legislation—On the petition of Dr J Allen McLaughlin, state health commissioner, a bill has been introduced before the Massachusetts General Court which aims to prevent the sale or delivery of milk in any city or town without a permit from the local board of health after inspection of the facilities for producing and handling this food It provides that the permit may contain reasonable conditions for the protection of the public health and may be revoked for failure to comply therewith The bill has been referred by the Senate to the committee on agriculture and public health

NEW YORK

Revision of State Sanitary Code—A recent revision of the state sanitary code provides that, in a case of infectious disease when no physician is in attendance, it shall be the duty of the head of the household and of the proprietor or keeper of any hotel, boarding house or lodging house to report immediately to the health department all facts relating to the illness of any one in the household who appears to be affected with any communicable disease

New Avenue of Public Health Education—State Commissioner of Health Biggs, on March 4, announced that five railroads have given the department of health permission to post health bulletins in their stations These railroads are the following New York Central, Delaware and Hudson, Lehigh Valley, Erie, and Pennsylvania With the cooperation of these five railroads, the department of health will be able to post bulletins in more than 1,000 railway stations

To Amend Boylan Law—An effort will be made to have the state drug law amended so that a physician may not prescribe a habit-forming drug for a period of more than two weeks, and by which the physician will be required to make three copies of each prescription so that one may be filed with the board of health These amendments were included in the original bill but were cut out at the time the bill was introduced because of the strong opposition to them which threatened the defeat of the entire bill

"Patent Medicine" Bill—A bill has been introduced in the legislature simultaneously by Assemblyman Fertig and Senator Hamilton which aims to compel "patent medicine" manufacturers to inform the public as to the exact contents of their nostrums The proposed measure follows exactly the provisions of the ordinance of the health department of New York City The latter earnestly requests every public spirited citizen to give effective support to this measure, so that the standard set by the municipality and state of New York will eventually lead to national legislation for the control and sale of "patent medicines"

Publicity and Education—In order to inform the public of what has been done by the department, and how the appropriations were expended during the last fiscal year, Health Commissioner Biggs has mailed to members of the legislature, mayors of cities, village presidents, health officers and others interested, a pamphlet summarizing the work of the department from Oct 1, 1914, to Sept 30, 1915 Particular attention is called to the reduction in the death rate from 15 8 per 1,000 in 1913 to 15 1 in 1915, and also to the marked reduction in the infant death rate from 120 in 1913 to 101 in 1915

New York City

Trichinosis in Far Rockaway—Four deaths from trichinosis have occurred within two weeks in St Joseph's Hospital at Far Rockaway All the victims were members of one family who had eaten two young pigs bought from a peddler

Lectures on Health Topics—The Working Women's Protective Union is giving a course of seven lectures on health subjects Among those who have agreed to speak are Drs Henry Dwight Chapin, Walstein M Tompkins, John B Solley, Jr, Haven Emerson and William J Robinson

Death of Mrs Jelliffe—On March 3, Helena Leaming Jelliffe, wife of Dr Smith Ely Jelliffe, died from cerebral hemorrhage, aged 48 Although not a physician, Mrs Jelliffe was in close touch and sympathy with medical work, and her cooperation with her husband, chiefly through translation, has broadened the fields of nervous and mental medicine

Free Course of Instruction in Contagious Diseases—The department of health announces that, beginning March 7, at the Willard Parker Hospital, a free course of instruction in contagious diseases will be given Each course consists of six clinical and two laboratory lessons given during two successive weeks on Tuesday, Wednesday, Thursday and Friday, at 2 o'clock Classes are limited to ten members Physicians desiring to participate are invited to register with the Bureau of Public Health Education, Department of Health, 139 Centre Street

Health District No 1—The *East Side Chronicle*, which is the monthly periodical of Health District *No 1*, has found it necessary to increase its issue from 5,000 to 15,000 copies This is very gratifying to those conducting the work in this district, and bears witness to the interest taken in this work which was begun several years ago as an experiment to demonstrate the value of intensive health work Health

District No 1 is amply demonstrating the value of its methods The health officer of the district has been elected a member of the executive board of the East Side Neighborhood Association, a director of the Parent's Association of Public School No 62 and a member of the executive board of the Seward Park Community Center, thus all these associations operate in Health District No 1 and an active participation of the health officer in all the affairs of the district is insured

NORTH CAROLINA

Personal—Dr Hubert A Royster, Raleigh, secretary of the state board of medical examiners, has accepted an invitation to deliver the address to the graduating class at the Naval Medical School Washington D C April 12

North Carolina in Registration Area—Two clerks from the U S Department of Vital Statistics at Washington D C, have spent several weeks in checking up the vital statistics of the state board of health at Raleigh, and it is expected that on their return and report the state will be admitted to the registration area

Meeting of State Society—The sixty-third regular annual session of the Medical Society of the State of North Carolina will be held in Durham April 18 20 under the presidency of Dr M Hall Fletcher Asheville County secretaries are reminded of the change of date of holding the annual session which was formerly held in June

Antityphoid Unit.—The state board of health announces that Cabarrus and Mecklenburg counties are the first to make application and to be accepted by the state board for the unit of antityphoid work which the board proposes to undertake for a number of counties during the summer These counties have already made the required appropriation and the board is preparing the schedule, which will be ready in April or May As a result of the work done last year more than 50,000 people were immunized against typhoid fever

Tuberculous Clergymen—The state board of health has offered space in the park of 1 400 acres surrounding the State Sanitarium for Tuberculosis, Montrose, to any church for the erection of one or more cottages for the housing of ministers and their families who may become tuberculous The offer will also be extended to various secret societies and fraternal organizations in the state or if preferred, churches or other organizations may have the privilege of endowing one or more beds in the attractive new building now being completed at the sanatorium

PENNSYLVANIA

Must Take Additional Year—A resolution was adopted recently by the Bureau of Medical Education and Licensure of Pennsylvania that graduates of all medical schools in the Dominion of Canada be required to take the final year in one of the Pennsylvania medical colleges and to qualify in the hospital intern year before being eligible to enter the Pennsylvania licensing examination This action is similar to that taken in recent years by the licensing boards of certain Canadian provinces, affecting graduates of American medical schools

Personal.—Dr Jane Wells Craven, Pittsburgh, who is in charge of the Pittsburgh Field Hospital, sailed for Europe on the *Rochambeau*, March 4——Dr John C Miller, Shenandoah, who has served for a year in Hungary and Russia with the American Red Cross unit, returned home, February 22——Dr John A. Fritchey, Harrisburg underwent a fifth surgical operation at the Presbyterian Hospital, Philadelphia February 25——Dr Daniel W Collins, for seventeen years a member of the staff of Mercy Hospital, Wilkes-Barre, has resigned——Dr John B Armstrong, Beaver, was operated on at the West Penn Hospital, Pittsburgh, recently, and is reported to be doing well——Dr Elmer S Stambaugh, Thomasville, who has been critically ill, is reported to be slowly improving——Dr Frank S Simpson, Pittsburgh, has been visiting in Pensacola, Fla

Philadelphia

Smallpox in City—Four cases of smallpox have been discovered within a week in different sections of the city Nearly 4 000 people have been vaccinated All were colored people, and in fact all the smallpox here in the last five years has been among colored people

Memorial to Dr Musson—A special operating room for ear, nose and throat cases has been equipped by the graduates and friends of the Women's Medical College of Pennsylvania in memory of Dr Emma E Musson, who was the first female professor of otology

Ambulance Oil Given to French Hospital—The oil men of this city have temporarily at least saved the situation for the American patrons in the work of caring for the sick and wounded of the French army at the American Ambulance Hospital One hundred barrels of oil were given by the Oil Trade Association of Philadelphia The French government has given the oil, but lately has found it impossible to get a supply There are 160 patients in the hospital

Personal—Dr Clarence Rugh delivered an address before the Lawrence County Medical Society, February 18 on 'Tuberculosis of Bones"——Dr William J Ryan has been appointed assistant ophthalmologist at the Philadelphia General Hospital——Dr Charles S McGiven has been appointed clinical assistant physician to succeed Dr Roy Parker, promoted——Dr Edwin W Rodenheiser has been named assistant resident physician of the Bureau of Charities, to succeed Dr Joseph McIver, resigned

Medical Reserve Corps of the United States Army About Philadelphia—A meeting was held at the College of Physicians' Building on February 16 to form a permanent organization of those members of the Medical Reserve Corps of the United States Army residing in Philadelphia and the adjacent territory, including Pennsylvania and New Jersey The organization will be conducted along the same lines as those which have been proved successful at other centers, including New York Chicago and St Louis

John Thomson, the Physicians' Helper—The death of John Thomson city librarian has brought sorrow to many members of the medical profession of this center, and especially to those in the Philadelphia County Medical Society, who are more especially interested in the value to doctor and patient of the 'branch" plan It was through the personal influence of Mr Thomson that the directorate of the Free Library system of the city so promptly enabled the Kensington Branch to meet at the Lehigh and Sixth street building, the first section of the County Society to meet in one of the Carnegie library structures The North the West, the Germantown, the Southwark and Frankford branches came later

Board of Health Plans Improvements—The board of health under the directorship of Dr Wilmer Krusen, is determined to improve the Byberry tract and will make of it one of the best municipal hospital and institutional places of the country The first improvement to be made there will be the completion of a heat and power plant, which will make available the buildings already erected for feebleminded women of child-bearing age This plant is expected to be ready for use by August——A contract has just been awarded for a sewage disposal plant at the Byberry tract, which will be constructed at an approximate cost of $18 000 The tract, which comprises nearly 1 000 acres, has suffered previously from a faulty water supply——A new institution for insane men and women will be erected on the tract under the new health administration The crowded condition of the Philadelphia General Hospital for the Insane has made the erection of new buildings imperative——In connection with the study of insane persons at the Philadelphia General Hospital, Dr Krusen has appointed four additional physicians to the neurologic department——A campaign for the elimination of spitting in public places is also about to be started, and the police will be instructed to approach any person observed to have violated the statute and hand the offender a card containing a copy of the act against spitting

WISCONSIN

Optometrists Seek School—The optometrists of the state are said to be demanding the establishment of a department of optometry in the state university, Madison

Personal—Dr Walter S Stevens, U S I S, agency physician at Keshena, has been appointed school physician at Mount Pleasant, Mich——Dr Norman F Hoffman, formerly superintendent of the State Tuberculosis Sanatorium, Wales, has reopened his office in Milwaukee

Typhoid in Milwaukee—One hundred and seventy-seven cases of typhoid fever have been reported to the health department of Milwaukee, with eight deaths, up to February 28, and Health Commissioner Ruhland announces his intention of asking for general antityphoid inoculation unless the epidemic is checked

VIRGINIA

License Tax for Doctors Defeated—In the house of delegates, February 17, the bill fixing a tax of $10 on physicians was defeated by a vote of fifty-seven to twenty-four The vote was on the engrossment of the bill and by refusing engrossment, the house defeated the bill and struck it from the calendar There was formerly a tax of $15 a year on physicians, but this was repealed by the legislature in 1914

Communicable Diseases—Health Officer Ernest C Levy, Richmond, states that in the opinion of the health department, an epidemic of measles has made its appearance among schoolchildren and is spreading rapidly He urges all physicians to comply with the city ordinance and report all cases as soon as possible——Several cases of smallpox have been reported in the northern part of Frederick County, and all schoolchildren have been ordered vaccinated

CANADA

Hospital News—The Queen's Canadian Hospital Aids is a club of girls organized for the purpose of raising funds and making surgical supplies for the Queen's Canadian Military Hospital, Beachborough Park, Shorncliffe, England It is located in Toronto, but the hospital was organized in Kingston, Ont——The Mount Sinai Sanatorium at Ste Agathe, Que, treated ninety-eight tuberculous patients in 1915 Of that number forty-five were discharged cured thirty-nine are still inmates, seven left uncured, and only seven died, five of the latter being old cases of long standing The institution shows a deficit for the year of over $8,000, the expenses amounting to $25,850——Although the increased cost of living advanced considerably in Ontario in 1915, the Stratford (Ont) General Hospital reduced the per diem expenses of their institution by 12 cents The average cost per patient per day was $1 50 There were 671 patients treated, 102 being free patients

Personal—Dr John A Blezard, Warkworth, Ont, has enlisted with the Royal Army Medical Corps and expects to go overseas at an early date——Surg-Gen George A Sterling Ryerson, Toronto, delivered an address before the Canadian Club, New York February 8 As a result the club has presented a motor ambulance to the Canadian Red Cross Society——Capt C E Cooper Cole, formerly a practitioner in Toronto, who has been in France with No 1 Clearing Hospital, then with No 2 and was then transferred to the Princess Patricia Regiment was reported to have been wounded on February 24——Dr Harry J Watson, Winnipeg has been appointed medical officer of the 144th Battalion ——Hon Dr Robert A Pyne, minister of education in Ontario, who has been in England for nine months superintending the erection and equipment of the Ontario Military Hospital at Orpington, Kent, is expected home this week——Dr Howard Black, a house surgeon of the Toronto General Hospital, has been appointed assistant superintendent of that institution, vice Dr Charles K Clarke, resigned, to pursue postgraduate studies

A National Department of Health—Dr Steele, M P North Oxford, Ont, introduced a resolution in the Canadian House of Commons last week expressing the greater need at the present time for a national department of health than at any previous time in the history of the Dominion He pointed out that while all the provincial governments maintained well-organized health boards, the Dominion had the control of many matters relating to the health of the people distributed over eight or ten departments of the government Practically every European nation, with one or two small exceptions, has organized national health departments, but Canada lags behind He spoke of the progress made in the United States toward a department of health, also in Japan There was urgent need for such a department in Canada, as at the close of the war there would in all probability be a greater influx of immigrants than ever before in the history of the country He believed that 40 per cent of the babies dying in Canada every year could be saved It was promised by the government that the matter should receive due consideration The Canadian Medical Association first began to urge a federal department of health on the Canadian government in 1901

GENERAL

Typhus Investigator Dies—Morris Buttner, a United States immigration inspector at El Paso, who had been searching for evidence of the presence of typhus fever in Juarez, Mexico, for twenty-four days and reported that no traces of the disease could be found there, died in El Paso, February 27, it is said from nonepidemic typhus fever

The Virus of Rocky Mountain Spotted Fever—Surg Lunsford D Fricks, U S P H S, in the current issue of *Public Health Reports*, states that he has been able, by the use of anaerobic methods, to cultivate from the blood of guinea-pigs infected with Rocky Mountain spotted fever certain bodies, probably of a protozoan nature, which he believes may bear some definite relationship to the disease

Change Camp Dates to Accommodate Association—In order to permit the attendance at the annual meeting of the American Medical Association at Detroit, June 12 to 16 of those officers of the medical corps of the organized militia who desire to attend, the days previously set for camp of instruction of medical officers and noncommissioned officers of the organized militia have been changed from June 5 to 15 to June 19 to 29 by the Chief of the Division of Militia Affairs

Life Insurance Directors Elect Officers—At the sixth annual meeting of the medical section of the American Life Convention, held in Birmingham, Ala, March 1 to 3, the following officers were elected Dr Frank W Foxworthy, Indianapolis, chairman, Dr J Pinkney Turner, Greensboro, N C, vice chairman, and Dr Frank L B Jenney, Chicago, secretary (reelected) Drs Green V Woollen, Indianapolis, and Charles N McCloud, St Paul, were elected members of the board of managers

Missouri Valley Physicians Meet—The twenty-eighth semiannual meeting of the Medical Society of the Missouri Valley will be held in St Joseph, Mo, March 23 and 24, under the presidency of Dr John P Lord, Omaha Dr Floyd H Spencer is chairman of the committee of arrangements On the first day there will be a symposium on "Diseases of the Knee Joint" and on the second day one on "Syphilis" The banquet will be held on the evening of the first day, when the members will be guests of the Buchanan County Medical Society

The Journal of Immunology—The first issue of the *Journal of Immunology*, the official organ for serology and hematology, and the American Association of Immunologists, has just appeared It contains articles by Drs Richard Weil, J A Kolmer, Frederick P Gay, Ruth L Stone, T Harris Boughton, F Berry and C O Melick, as well as an abstract of the Proceedings of the Society for Serology and Hematology, New York The journal is to be issued monthly The editor is Dr Arthur F Coca, 8 West Sixteenth Street, New York City

Army Medical School to Have Charge of Washington Asylum and Jail—The transfer of the supervision and direction of the medical service of the Washington Asylum and Jail, in the District of Columbia, from the board of charities to the commandant of the Army Medical School is provided for in a bill recently introduced into Congress by Senator Hollis of New Hampshire The Washington Asylum is substantially the city hospital for the District of Columbia and has approximately 250 beds The apparent purpose of the bill is to enable the students in attendance at the Army Medical School to obtain clinical instruction

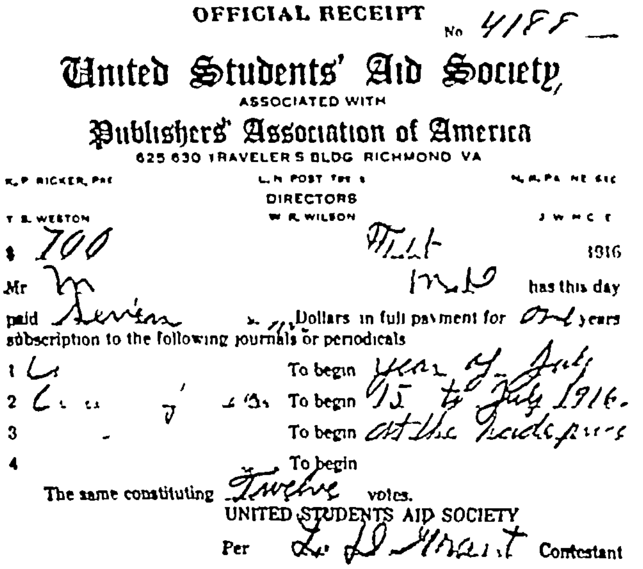
Admission to Mails of Medicinal Preparations Containing Poisons—The admission to the domestic mails of medicinal preparations which contain poisons in only sufficient quantity and form in combination with other ingredients to be used exclusively as curative or remedial substances, and which are not dangerous or injurious to life, safety, health or property, is proposed in a bill recently introduced into the house of representatives by Representative Griffin of New York The article mailed is to bear the label or superscription of the manufacturer thereof or dealer therein, or of the licensed physician, pharmacist, dentist or veterinarian preparing or prescribing the same

Army Medical School Lacks Adequate Facilities—Impressed by the work of the Army Medical School and the inadequacy of the facilities provided for that work, Drs John M T Finney and Joseph C Bloodgood of Baltimore recently left with the president the following memorandum

> We are so impressed by the character and importance of the scientific work which is being done there we feel the need of bringing to the attention of yourself and the country the utterly inadequate facilities provided not only for purposes of investigation, but for those of instruction as well The quarters are unsuited for existing conditions and they will prove still more so in case of any expansion of the service
>
> We furthermore, from our experience as teachers, believe that the Army Medical School should be in the vicinity of and closely affiliated with, the newly established Walter Reed Hospital for the benefit of both institutions

Investigation of the Dairy Industry—Reciting that dairies and dairy products are not subject to federal inspection and that there is a growing sense of alarm among consumers, a resolution introduced into Congress by Representative Linthicum of Maryland calls for the appointment by the speaker of the house of representatives of a committee of five members of the house to investigate and report as soon as practicable (*a*) whether conditions prevailing in dairies and dairy products seriously menace the health and property of the people of the United States, (*b*) whether federal inspection and supervision, either alone or in cooperation with state and municipal inspection and supervision is necessary to the reasonable protection of the health and property of the citizens of the United States, and (*c*) if so, then the best and most economic methods of inaugurating and enforcing such inspection and supervision

Once More a Warning—The Journal reproduces here what is stated to be an official receipt issued by an agent who solicits subscriptions for various publications for which he is not an authorized agent The Journal has been informed that an investigation made in Richmond Va, revealed the fact that there is no United Students' Aid Society in that place In fact the room numbers printed on the receipt blank are higher than those actually existing in the building This scheme resembles to some extent that described in The Journal, Sept 4 1915, p 888, Oct 23, 1915, p 1472, and Nov 20 1915, pp 1825 and 1827 As the name of the so called Students' Aid Society" has been changed though not the method of obtaining subscriptions, physicians are again warned concerning this scheme Money should not be paid to any one claiming to represent the American Medical Association unless he carries credentials bearing the signature of the Editor and General Manager and the seal of the Association.



OFFICIAL RECEIPT No 4188

United Students' Aid Society,

ASSOCIATED WITH

Publishers' Association of America

625 630 TRAVELERS BLDG RICHMOND VA

DIRECTORS

$ 700 1916

Mr has this day

paid Seven Dollars in full payment for one years subscription to the following journals or periodicals

1 To begin

2 To begin 15 to July 1916.

3 To begin

4 To begin

The same constituting Twelve votes.

UNITED STUDENTS AID SOCIETY

Per Contestant

Camps of Instruction for Medical Officers—Maj Louis T Hess, M C, U S Army, assistant to the Chief of the Division of Militia Affairs, announces the plans of the division for instruction of medical officers and noncommissioned officers of the organized militia and officers of the Medical Reserve Corps, U S Army, inactive list, for the summer, providing Congress makes the necessary appropriations The camps will be located at Tobyhanna, Pa, Anniston, Ala, Sparta, Wis, Fort Riley, Kan, and Monterey, Calif The pay, transportation and subsistence of enlisted men will be defrayed by funds allotted to the states from the appropriations for the organized militia Officers of the Medical Reserve Corps will attend the camp at their own charges, as no provision of law is made whereby they can receive pay or transportation from federal funds Officers, noncommissioned officers, and sanitary units of the organized militia will be ordered to the schools on the recommendation of the adjutants general of the various states and of the District of Columbia At the Tobyhanna, Pa., camp, the organized militia school will be in session from June 19 to 29, the joint camp from June 29 to August 20, and that for the Medical Reserve Corps from August 21 to 31 At this camp the fifth, sixth, seventh and eight militia divisions will assemble At the Anniston, Ala, camp, the ninth and tenth militia divisions will receive instruction The period from July 31 to August 10 will be devoted to the militia and Medical Reserve Corps and a joint camp from August 14 to September 14 At Sparta, Wis, the organized militia will assemble from June 19 to 29, there will be a joint camp from June 29 to August 10, and the Medical Reserve Corps will receive instruction from August 14 to 24 This camp will include the eleventh twelfth and thirteenth militia divisions The Fort Riley Kan, camp, at which the fourteenth and fifteenth militia divisions will assemble, will be opened for the instruction of the organized militia and the Medical Reserve Corps from June 19 to 29 and there will be a joint camp from June 15 to July 16 The sixteenth militia division will receive its instruction at Monterey, Calif The school for the organized militia and Medical Reserve Corps will be held from July 17 to 27, and the joint camp from August 1 to 11

WAR NOTES

Medical Unit Sails for Germany—The third medical relief unit for Germany sent out by the American Physicians' Expedition Committee Arthur von Briesen New York chairman sailed on the *Oscar II*, February 17 Three surgeons sailed with this unit, two more will leave in a few days

Germany Prohibits Certain Imports—According to *Commerce Reports,* an ordinance, published Feb 26, 1916, in Berlin, prohibits until further notice the importation into Germany of certain articles of luxury Among the large number of articles specified are certain fruits champagne certain clothing, furriers' goods, machinery and tools, including typewriters, adding machines and sewing machines

LONDON LETTER

London, Feb 14, 1916

The War

THE HEALTH OF WOMEN SHELL MAKERS

The wholesale withdrawal of men from industries to military service has resulted in the employment of women in industrial occupations on a huge scale The government has made every provision to safeguard the health of the large number engaged in munition work A health and munition workers committee consisting of medical experts and philanthropic persons has just issued a report on the question of the health of the women engaged in shell making It is pointed out that the increased output which leads to bad health and so to much lower output is no economy The matter is dealt with under five headings Of these the period of employment is fully considered and the effect of night work examined critically Night work is perhaps a necessary evil at present The committee calls for improved means of transit to and from work, and also urges that when possible the three shift system should be adopted A portion of Saturday and the whole of Sunday should be reserved for rest, and the periodic factory holiday should not be omitted Canteens should be opened at every change of shift and seats with backs provided, the extra expense being fully compensated for by the extra comfort and so by the extra efficiency Cloakrooms and drying rooms for wet weather, and working overalls also make for comfort. In all cases forewomen, nurses and welfare supervisors should if possible be appointed, and a trained nurse should always be available where there is liability to accident or a large number of workers Overtime, it appears, must continue, but requires to be made subject to restrictions These cannot well be formulated till a trial of restricted Sunday work has been made The following recommendations are formulated as suitable to war conditions

1 The average weekly hours (exclusive of meal times) should not exceed from sixty-five to sixty-seven, including overtime Hours in excess of sixty-five should be worked for only short periods, and to meet sudden and unexpected circumstances It may be desirable to differentiate to some extent between different kinds of work, and to fix a rather lower limit of hours for work requiring individual attention

2 Where practicable the overtime should be concentrated within three or four days in the week, which should preferably not be consecutive

3 When overtime is worked it is specially important that there should be no Sunday work

4 The practice prevailing in certain districts of working from Friday morning, all through Friday night, and until noon on Saturday should be discontinued Such hours may be permissible for short spells, but cannot be satisfactory from the point of view either of health or of output, if continued for indefinite periods

Antiseptics from Sea Water

The electrolytic decomposition of sea water yields sodium hypochlorite, which is a powerful antiseptic, at a very small cost This fact has been turned to account in the disinfection of hospital ships, which are so largely used by us in the war, by means of an apparatus recently installed in the *Aquitania* under the supervision of Dr Dakin, and at the instance of the medical research committee of the national insurance act The apparatus consists of an electrolytic cell, a *reversing switch* capable of carrying 100 amperes, and some ordinary insulated electric cable The cost is about $250 The cell stands on a rubber mat to insulate it, and is raised on a low table to enable its contents to be poured out easily It is filled with cold sea water, and if a current of from 60 to 75 amperes at 110 volts is then turned on, a solution containing 2 parts of sodium hypochlorite or available chlorin to 1,000 parts will be obtained in five minutes The cost of this solution works out at 6 cents per hundred gallons The solution is also excellent as a sterilizer of drinking water (1 part chlorin to 1,000,000 parts), and as an antiseptic for wounds (used undiluted as produced by the electrolyzer, that is, 2 parts sodium hypochlorite to 1,000 parts) Further, in the butcher's department its value was soon evident, and also in the laundry for soaking undyed cotton and linen goods It was added to the water in the swimming bath of the ship in the proportion of 1 2,000,000, with the result that bacteria present to the number of 2,000 per cubic centimeter were reduced to 200 The economy in replacing expensive coal-tar disinfectants, such as phenol (carbolic acid), by electrolytic hypochlorite will approximately pay for the cost of the cell ($250) in the course of a single trip of three weeks

An Outbreak of Diarrhea Due to Pollution of Public Water Supply

An extensive outbreak of diarrhea affecting 1,700 persons in a rural district of Derbyshire has been traced to an unusual cause—sewage contamination of the public water supply At first the outbreak was puzzling It was thought that the symptoms might be due to the gastro-enteric form of influenza or to food poisoning The large number of persons simultaneously attacked rendered the former hypothesis unlikely, while, were the latter to be entertained, it was obvious that some article of almost universal consumption would require to have been inculpated, and no food used locally was found to be so consumed Careful inquiry excluded milk, shellfish and other articles of food as possible causes of the outbreak Finally, suspicion fell on the water supply, as the vast majority of persons attacked by diarrhea resided in the two parishes, while the inhabitants of other parts of the district were practically exempt The two parishes have a common water supply, distinct from that of the remainder of the district It was found on bacteriologic examination that while the water in the reservoir was free from *Bacillus coli*, water drawn from household taps in the affected parishes contained that organism It was therefore conjectured that sewage had gained entrance to the water main at a point between the reservoir and the boundary of the affected district The epidemic commenced in the first week of March, and was at its height in the third week, after which it declined March 19, a sewer which crosses over the main conveying water from the reservoir to the affected area was found to be broken for a distance of 16 feet, and had apparently been in this condition for a considerable period, as sewage was intimately mixed with the surrounding clay The water supply throughout the whole of the two affected parishes was cut off for two days, and the repair of the sewer coupled with the cutting off of the water brought the epidemic practically to an end No defect could be found in the water main, but in a by-pass connecting the inlet of the reservoir with the outlet main, a hole was discovered only 2 feet distant from one of the broken pipes of the sewer

The onset of the attack was generally sudden and accompanied by headache, nausea, pains in the abdomen and back, cramps in the leg, and diarrhea The patients often complained of "shivers" or rigors in the early stages In mild cases the diarrhea lasted for one day, but in the severe cases it persisted for a longer period and was profuse and frequent, a condition amounting to collapse being produced Sometimes these symptoms were succeeded by lassitude and headache accompanied by depression As a rule, the symptoms persisted for a period ranging from ten days to a fortnight, during which the patient felt disinclined for work The spleen and liver were not palpable No spots were observed In the chest the signs appeared normal During the period of the outbreak six cases of typhoid fever were reported, but it is probable that only four of these patients had the disease The results of bacteriologic examination were not very definite Specimens of feces in twelve cases were examined The typhoid bacillus was isolated in two, the typhoid bacillus and the dysentery bacillus Y in one, the dysentery bacillus Y alone in one, while the remaining eight were found negative for typhoid and dysentery Specimens of urine from seven patients were examined and all found sterile The blood in thirteen cases was investigated twelve of these gave a typhoid Widal and a dysentery Widal, while one gave a typhoid Widal alone

PARIS LETTER

Paris, Feb 10, 1916

The War

THE SANITATION OF BATTLEFIELDS

As I have mentioned in previous letters, the solution of this problem is occupying the attention of many men Cremation, which has been suggested, is distasteful to many persons in France Dr F Bordas advises instead accelerated decomposition of corpses, which will permit the ultimate removal of the bones without danger to the living In the "Study of Putrefaction," which Dr Bordas published in 1892, he noted the extreme variability of the time required for decomposition Almost each cemetery has its own peculiarities due to its geologic characteristics In some cemeteries, like the Campo Santo of Pisa, bodies decompose rapidly, a fact which is attributed to the alkalinity of the soil In others, like that of Saint Nazaire, the soil of which is compact clay formed from disintegrated mica schists, which retains the water permanently, decomposition is so slow that bodies have been found intact five years after burial In dry, sandy soils, on the other hand, the corpse mummifies as it does in the dry cold air of Saint Bernard The endeavor, then, should be to realize the conditions which favor decomposition Bordas describes some interesting experiments in the *Revue d'hygiene* Using bodies of animals he ascertained that the germs and ferments of manure act rapidly and powerfully to produce decomposition Obviously, however, manure cannot be used to accelerate the decomposition of the human body Bordas therefore made an analytic study of the principal species of bacteria found in manure, and found that one group of ferments of manure has particularly powerful action, that of the ferments of urea Bordas placed the body of a horse in a trench on a bed of straw and covered it with straw sprinkled with a culture of urea ferments In twenty-one days nothing remained of the body except the bones This transformation would have required three or four years in earth under ordinary conditions To apply these experimental data to human bodies, Bordas says it would be necessary to place in a trench a layer of straw or leaves, to lay the bodies on this bed of straw and to cover them with a layer of straw or leaves moistened with the appropriate bacterial culture. Earth should not be laid on top of the straw, it would disturb the processes of decomposition, and it is not necessary, for no malodorous gases are disengaged during decomposition under these conditions In a few weeks or months, at the most, nothing but bones would remain and burial might be made without the least danger to the living

SANITARY CONFERENCE AMONG THE ALLIES

The allies, after having shared their experiences in regard to the conduct of war, the manufacture of munitions, etc., have concluded that the same thing should be done with respect to matters of prophylaxis, either among the civilian population or among the armies in the field A sanitary conference, to which the allied nations are to send delegates, has therefore been decided on A preliminary meeting of the French delegates took place under the presidency of M Santoliquido, the Italian hygienist, at the office international d'hygiene at Paris At this meeting the principal points to be discussed at the conference were agreed on

THE *COORDINATION* OF ASSISTANCE TO THE ARMIES OF THE ORIENT

Under the authorization of the military medical service, offices have been opened at 62 Rue de Richelieu, *Paris*, by an organization intended to coordinate the aid sent to the armies of the Orient, and to centralize the distribution of gifts Under the auspices of the central administration of the war, these donations will be distributed where needs are most pressing The work of this bureau will include not only the soldiers of our expedition to the *Orient and* the Serbian army at Corfu, but also the Serbian women, children and old men who have taken refuge in Albania and Greece

THE SOCIETY FOR THE BENEFIT OF THE MILITARY HOSPITALS

A new association called Pour les Hopitaux militaires, has just been formed The purpose is to gather and distribute gifts to the hospitals in which soldiers from our armies are being treated The headquarters of the society are at 131 Avenue des Champs Elysees, Hotel Astoria, Paris, and the president is Mme la marquise de Noailles who is assisted by M Henry Soulie as a general delegate from the war department.

DELAYED TETANUS

At a recent session of the Academie des sciences Dr P Bazy made an interesting report on this subject Delayed tetanus may occur from thirty to fifty days after the wound which is regarded as the cause the patient may or may not have received a preventive injection of serum The tetanus may appear without any appreciable cause, but it manifests itself especially following operations not necessarily on the site of the original wound or in any way affecting it, as well as when the wound displays inflammatory symptoms again Delayed tetanus is very serious, for death has been observed in one third of one series of cases and in one half of another The lesson to be drawn from these facts is that it is not sufficient to make a single injection of preventive serum immediately after the wound but that in all cases of suppurating wounds the injection should be repeated every eight days for about a month and again before any serious operation

CLINICAL IMPORTANCE OF SOME TROPHIC DISTURBANCES IN THE COURSE OF WOUNDS OF WAR AFFECTING THE NERVES OF THE LIMBS

Dr Maurice Villaret read a paper on this subject before the Societe de neurologie de Paris From a study of 110 personal cases of posttraumatic paralyses of the limbs, he concludes that hypotrichosis and spontaneous hypohidrosis are, like the reaction of degeneration, signs of complete section of the nerve Hypertrichosis and hyperhidrosis correspond to an incomplete lesion of the nerve susceptible of regression and accompanied by light disturbances of the electric reactions The absence of any modification of the hair and spontaneous perspiration is a characteristic of functional impotence without nervous lesion and with negative electrical reactions Villaret also emphasizes two trophic disturbances which are symptomatic of serious neuritis these are bleeding from a prick and ulceration following prolonged galvanization

OPENING OF THE FRENCH HOSPITAL AT MILAN

In previous letters (The Journal Oct 9 1915 p 1296 and Oct 23 1915, p 1474), I mentioned that French cities had offered a hospital to the Italian Red Cross This hospital has just been opened at Milan, in the buildings of the Ricordi factory, in the presence of Italian and French persons of distinction

THE ACTIVITY OF THE SOCIETY FOR AID TO WOUNDED SOLDIERS

From Aug 2, 1914 the first day of mobilization, to Jan 1, 1916, the Sociéte Française de secours aux blessés militaires one of the three societies which make up the French Red Cross has operated 796 hospitals containing 67,081 beds It has fitted up a large transatlantic liner, the *Charles Roux*, as a surgical hospital and has sent it to the Orient It is now organizing at Saloniki a large hospital of 500 beds Besides its 796 hospitals, the society supports 930 first-aid posts, 70 railway station infirmaries, which feed the sick and wounded on trains passing through, and which have distributed more than 5,000,000 meals, and 45 railway station canteens, a single one of which has distributed 226,900 meals since the outbreak of the war The graduate nurses of the society number 15,000, about 3,000 of which are serving in the military hospitals The activities of the society have necessitated the large outlay of 32,114,000 francs ($6,422,800) which has been distributed as follows (1) hospitals, medicines and dressings, 26,071,000 francs ($5,214,200), (2) railway station infirmaries, first-aid posts, canteens, 3 540 000 francs ($708,000) (3) contributions for various purposes 264 000 francs ($52 800), (4) automobiles (construction and upkeep), 939,000 francs ($187,800), (5) sent to the hospitals at the front, 1,300,000 francs ($260,000)

PERSONAL

Among those recently mentioned for conspicuous gallantry is Dr Albert Thevenot, agrége professor at the Faculté de medecine de Lyon, in the following terms "An experienced surgeon, charged with the treatment of the wounded who could not be removed from near the front, he was able, by his ingenuity and the most commendable utilization of local resources, to adapt to the exigencies of modern practice such quarters as happened to be available and to accomplish with success the most daring and delicate surgical operations, obtaining for the seriously wounded the best chances of safety and preserving seriously endangered lives"

The *Journal Officiel* publishes also the following mention for gallant conduct in civil life 'The government brings to the attention of the country the fine conduct of M Samsoen, physician at Hazebrouck (departement du Nord), who was the only physician remaining after mobilization in a population of 12 000, and within a considerable radius He rendered medical service day and night without neglect or ceasing He added to the medical care given to the population the organization of a free dispensary for refugees With unwearying devotion, beyond all praise, he cared for those members of the civilian population who were wounded by bombs and shells and for the aged and sick and for the obstetric cases brought from the arrondissement of Hazebrouck from the canton of Armentieres, and from the Belgian cities Poperinghe and Ypres"

SANATORIUMS FOR TUBERCULOUS SOLDIERS

The undersecretary for the military medical service has just announced that by agreement between the war department and the interior department the latter will receive in special establishments called *stations sanitaires,* for a period of not more than three months, noncommissioned officers and soldiers affected with open pulmonary tuberculosis The head physicians of hospitals are to select patients who have not sufficient means to provide suitably for themselves at their own expense They are never to include patients whose condition is so serious that improvement under favorable conditions cannot be expected The *stations sanitaires* are not hospitals, properly speaking They are unable to receive cases requiring special care, or those in which the lesions are already so extensive and so far advanced that a fatal issue is inevitable within a short time Neither are the men who are recognized as tuberculous on their arrival in the corps to be sent to these resorts, the latter are to be discharged immediately

The request for admission to a *station sanitaire* is to be addressed to the director of the medical service of the region, and transmitted by him to the interior department The interior department will inform the director of the medical service of the region, by telegraph of the resort to which the patient may be sent and the date when he may be admitted The patient is to be discharged from the army when, in the head physician's judgment, his stay at the sanatorium has been sufficiently prolonged, and in any case not longer than three months after his arrival

Soldiers affected with open pulmonary tuberculosis who have already been discharged from the service, but are still under treatment in a military hospital, may, if they consent, be suggested for transfer to a *station sanitaire*, but their admission there will not be at the expense of the war department

Death of Dr Thulié

Dr H Thulie former president of the municipal council of Paris and vice president of the superior council of the Assistance Publique, has just died, aged 84

Marriages

George Walworth Mellon, M D., Philadelphia, on duty with American Red Cross in Serbia to Miss Zagorka D Sabo of Belgrade, Serbia, at Athens, Greece, January 23

Walter F Payne, M D, Prairie Creek Ind., to Miss Panzy Lawson of Sullivan, Ind, at Terre Haute, Ind, February 20

Jack W Brown, M.D., Las Animas, Colo, to Mrs Mabel B Hager of Eaton, Colo, at Pueblo, Colo, February 21

Joseph P Kennedy, M D, Columbia, Pa, to Miss Lillian F Wardell of Toronto, Ont, at Columbia, February 22

William Russell MacAusland, M D, Boston, to Miss Dorothy Brayton of Fall River, Mass, February 23

Frederick Kirschenbaum, M D, Bensonhurst, N Y, to Miss Lena B Miller of Brooklyn, recently

Deaths

George Lane Taneyhill, M D, Baltimore, University of Maryland, Baltimore, 1865, aged 75, a Fellow of the American Medical Association, formerly president of the Baltimore City Medical Society, vice president of the Obstetrical and Gynecological Society of Baltimore, assistant surgeon of the Eleventh Maryland Volunteer Infantry during the Civil War, major, Medical Corps, Sixth Infantry, Maryland National Guard (retired), formerly president of the National Association of United States Pension Examining Surgeons, one of the most beloved practitioners of Baltimore, died at his home, March 2, from heart disease

Angelo Maestri, M D, New Orleans, Tulane University, New Orleans, 1895, aged 45, a Fellow of the American Medical Association and one of the best known practitioners and citizens of New Orleans, who was given a medal of honor by the king of Italy on account of his services to Italian subjects during an epidemic of yellow fever in New Orleans, organizer and head physician of the Citizens' Industrial Life and Sick Benefit Association, died at his home, February 18

Thomas Boyd Morris, M D, Atlantic, Iowa, Rush Medical College, 1900, aged 49, a Fellow of the American Medical Association and once president of the Cass County Medical Society, a well-known surgeon, secretary of the Atlantic Hospital Association, while crossing the tracks of the Chicago and Northwestern Railroad east of Atlantic, in his automobile, February 17, was struck by a train and died from his injuries in the Atlantic Hospital, February 19

Henry Brydges Yates, M D, Montreal, Que, McGill University, Montreal, 1893, aged 50, for several years Norwegian consul-general at Montreal and president of the Quebec branch of the Canadian Red Cross Society, lieutenant-colonel, Canadian Army Medical Corps, and on duty at the Third Canadian General Hospital at the front, died in the Granville Special Canadian Hospital, Ramsgate, England, January 22, from pneumonia

William C Bouton, M D, Waukegan, Ill, Northwestern University Medical School, 1889, aged 50, formerly a Fellow of the American Medical Association, a Fellow of the American Academy of Medicine, a member of the Illinois State Medical Society and formerly president of the Lake County (Ill) Medical Society, secretary of the Lake County Tuberculosis Institute, died at his home in Waukegan, March 1, from paralysis

William John Browning, M D, Indianapolis, Medical College of Indiana, Indianapolis, 1884, aged 62, formerly assistant superintendent of the Central Hospital for the Insane and formerly a member of the Indianapolis Board of Health, died at his home, February 23, from the effects of hydrocyanic acid, self-administered, it is believed, with suicidal intent, while despondent on account of ill health

Charles Winthrop Williams, M D, Minneapolis, Northwestern University Medical School, 1891, aged 52, formerly a Fellow of the American Medical Association, a member of the Minnesota State Medical Association, professor of materia medica and therapeutics in Hamline University, Minneapolis, died at his home, February 23

J McKendree Kemp, M D, Welcome, Md, University of Maryland, Baltimore, 1863, aged 79, surgeon in the Federal service during the Civil War and thereafter a practitioner of the Western Shore, Maryland, died in Johns Hopkins Hospital, February 18, from heart disease following the amputation of the right leg

Edson B Morrison, M D, Athens, Ohio, Starling Medical College, Columbus, Ohio, 1881, aged 55, for the last two years a resident of San Pedro, Isle of Pines, W I, and for many years prior to that time resident physician at the Ohio Hospital for Epileptics, Gallipolis, died at his home in Athens, February 23

Allen Walker, M D, Washington, D C, University of Maryland, 1886, aged 63, a member of the Medical Society of the District of Columbia and formerly one of the physicians to the poor of the District of Columbia, died at his home in Washington, February 21, from pernicious anemia

Milton Edward Baxter, M D, Jersey City, N J, Jefferson Medical College, 1909, aged 34, a Fellow of the American Medical Association, a member of the consulting staff of Christ's Hospital and of the Hudson Street Hospital, Jersey City, died at his home, February 22, from pneumonia

Samuel H Linn, M D, Rochester, N Y, University of Pennsylvania, Philadelphia, 1877, aged 72, a veteran of the Civil War in which he served in the Navy, for eighteen years a practitioner of dentistry in St Petersburg, Russia, and thereafter a resident of Rochester, died at his home, February 26

George W Smith, M D, Fort Smith, Ark, Tulane University, New Orleans, 1867, aged 74, surgeon in the Confederate service throughout the Civil War and later a practitioner and druggist of Alma, Ark, died at his home, February 20, from cerebral hemorrhage

Buckner Fairfax Scott, M D, Terra Alta, W Va, Jefferson Medical College, 1906, aged 36, a member of the West Virginia State Medical Association, a veteran of the Spanish-American War, postmaster of Terra Alta, died suddenly at his home, February 21

Thomas Shearer, M D, Baltimore, Homeopathic Medical College of Pennsylvania, Philadelphia, 1858, aged 90, formerly a practitioner of Charleston S C, and surgeon in the Confederate service throughout the Civil War, died at his home, February 18

Daniel Burr Stone, M D, Kramer, Ind, Chicago College of Medicine and Surgery, 1913, aged 33, pathologist of the Mudlavia Sanitarium, died in that institution, February 22, from burns received in an explosion of alcohol in his laboratory a week before

Ralph William Hill, M D, Garrisonville, Va, Milwaukee Medical College, 1908, aged 32, formerly a member of the Medical Society of Virginia, died in the Mary Washington Hospital, Fredericksburg, Va., February 20, a week after a surgical operation

Winfield Scott Madden, M D, Altoona, Pa, Jefferson Medical College, 1876, aged 65, who had been ill with nephritis for several years, died in the Blair County Home Hospital, Altoona, February 14, from erysipelas of the right leg and thigh

Theodore Keune, M D, New York City, College of Physicians and Surgeons in the City of New York, 1878, aged 63, a Fellow of the American Medical Association and for fifteen years visiting physician to Harlem Hospital, died at his home, February 26

William Ludy Baird, M D, Huntsville, Tex, University of Louisville, 1885, aged 58, for several years cashier of the Rockdale State Bank and for the last year head bookkeeper of the Huntsville Penitentiary, died at his home, February 17

Oliver P Kernodle, M D, Skiatook, Okla, University Medical College, Kansas City Mo, 1884, aged 57, who had taken a trip to Arizona for his health and was returning, died in a hospital in Oklahoma City, February 17, from tuberculosis

Benjamin W Phillips, M D, Leeper, Pa, Western Reserve University, Cleveland, 1876 aged 61, formerly a Fellow of the American Medical Association, a member of the Medical Society of the State of Pennsylvania, died at his home, February 8

William Hammond Eaton, M D, Adrian, Minn, State University of Iowa, Iowa City, 1902, aged 37, a member of the Iowa State Medical Society, while cranking his automobile, February 25, was run over by the car and instantly killed

Willis A Mirick, M D, Monticello, Iowa, Hahnemann Medical College, Chicago, 1878, aged 61, a member of the Iowa State Medical Society, died suddenly from heart disease while making a professional call in Monticello, March 1

William Byron McCoy, M D, Lincoln, Neb, Chicago College of Medicine and Surgery, 1914, aged 37, died at his former home in College View, Neb, February 21, from pneumonia, following a tracheotomy performed four days before

William R Lavender, M D, Omaha, University of Nebraska, Omaha, 1890, aged 60, a Fellow of the American Medical Association and a well known practitioner of Omaha for the last twenty-five years, died at his home, February 28

John A Dowell, M D, Albany, Ind, Eclectic Medical Institute, Cincinnati, 1881, aged 58, while walking across the tracks of the Lake Erie and Western road at Albany, February 19, was struck by a train and instantly killed

John H Shultz, M D, Logansport, Ind, Eclectic Medical Institute, Cincinnati, 1872, aged 73, a veteran of the Civil War and deputy treasurer of Cass County, Ind, from 1868 to 1872, died at his home in Logansport February 24

Eugene Harold Brice, Jr, M D, Atlanta, Ga , Atlanta Medical College 1915 aged 25 surgeon on the steamer *Stephen* of the Booth Steamship Line in its South American service, died February 13, and was buried at sea

Thomas Feemster, M D, Santa Cruz Calif , American Medical College, St Louis, 1882 St Louis College of Phys - cians and Surgeons, 1895, aged 65, died at his home, Dec 11, 1915, from carcinoma of the stomach and liver

John J Detwiller, M D, Easton, Pa , University of Pennsylvania Philadelphia, 1854, aged 81, a pioneer in the development of the slate and cement industries of Pennsylvania, died at his home, February 29

David Allyn Gorton, M D, Brooklyn, N Y Hygeio-Therapeutic College of New York New York City, 1858 aged 83, founder of the Eugenic Society of America, died at his home, February 23, from senile debility

William Harrison Lenox, Rogers Ark (license Arkansas, 1903), aged 78 a veteran of the Civil War and for half a century a practitioner of Arkansas, died at the home of his daughter in Little Rock Ark February 22

Loomis C Blanton, M D, Louisville, Ky , Hospital College of Medicine Louisville 1906, aged 32, deputy coroner of Jefferson County in 1908 and 1909, died at his home near Blanton s Station, Louisville, February 21

Stephen Hadley Steele, M D, Caruthersville, Mo University of Pennsylvania, Philadelphia 1854, aged 85, surgeon in the Confederate service during the Civil War, died at his home, February 17, from influenza

Mary Elizabeth Newcomb Law, M D, Windsor Colo , University of Michigan Ann Arbor 1890, aged 61, for many years a practitioner of Blissfield Mich , died at her home, February 9, from cerebral hemorrhage

Frank Wilmont Morse, M D, Thorndike Me University of the South Sewanee, Tenn , 1903 aged 35, a Fellow of the American Medical Association, died at his home, February 6 from pleurisy with effusion

Elijah Davis Arnet, M D, Robard, Ky , University of Louisville Ky 1894, aged 68, formerly a member of the Kentucky State Medical Association, died at his home, February 15, from pneumonia

M W Smith, M D, Gaffney, S C , Medical College of the State of South Carolina, Charleston, 1861, aged 80, a surgeon in the Confederate service during the Civil War, died at his home February 7

John Christian Modrack, M D, Hastings Mich Starling Medical College, Columbus, Ohio 1882, aged 68, died in the Marion County Infirmary, Marion, Ohio, February 13 from cerebral hemorrhage

Benjamin Franklin Richardson, M D, Lynn Mass , Harvard Medical School, 1886, aged 52 a Fellow of the American Medical Association, died at his home, February 16, from endocarditis

Ambrose M Keim, M D., Bethlehem Pa , Jefferson Medical College 1877, aged 61, coroner of Northampton County, Pa for twelve years, died at his home, February 14, from heart disease

Charles Wheeler Morse, M D, Salem, Mass , Boston University School of Medicine, 1889, aged 59, chief surgeon of the Essex County Homeopathic Hospital, died at his home, February 14

George S Engler, M D, Allentown, Pa , University of Pennsylvania, Philadelphia, 1863, aged 81, surgeon of the Rush Lancers during the Civil War, died at his home, February 12

Henry Ford, Paducah, Ky (license, Kentucky, thirty years' practice and examination, 1894), aged 80, died at the home of his granddaughter in Puducah, February 18, from senile debility

John Phillip Miller, M D, Enterprise, Kan , State University of Iowa, College of Homeopathic Medicine, Iowa City, 1888, died at his home, January 6, from acute bronchitis

Chesley R Roadman, M D, Rankin Depot Tenn , Lincoln Memorial University, Knoxville, Tenn , 1892, aged 56, died at his home, February 18, from cerebral hemorrhage

Richard H Hanchey, M D, Sugartown, La , Baylor University, Dallas, Texas, 1906, aged 40, was shot and killed at his home by his stepson, in a quarrel, February 15

Edgar C Davis, M D, St. Joseph, Mo , Ensworth Medical College, St Joseph, 1904, aged 53, died at the home of his daughter in Chicago February 14

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

COLLOIDINE

Report of the Council on Pharmacy and Chemistry

The following report on Colloidine has been adopted by the Council and its publication authorized

W A Puckner, Secretary

This preparation, manufactured by A Dubois, Paris, France and marketed in the United States by the Boracol Chemical Company, Passaic, N J , is described as

> A Colloidal Vegetable Iodine Combination"

Colloidine is sold in the form of tablets said to contain each ⅓ grain of iodin combined with 1 grain of 'Vegetable Albumen" obtained from gluten The advertising says much of the colloidal state which is 'characteristic of living organisms' within which "the reactions are nearly always between colloids" It is asserted that

> Colloidine possesses a considerable catalytic action It undergoes partial peptonization in the stomach and this work is continued in the intestines where the ferment erepsine destroys the albuminous molecule gradually liberating the iodine '
>
> Colloidine acts not only like iodine iodides and all the derivatives of iodine in general but by reason of its *Colloidal or living state*' it possesses a specific action on a great number of diseases'
>
> 3 tablets of COLLOIDINE are equivalent to 15 grains of iodide '
>
> The action of Colloidine is much gentler than that of all other products of Iodine *Its elimination is slower more regular and more prolonged*
>
> Never produces Iodism '

The Chemical Laboratory of the American Medical Association could not confirm these claims It reports that

1 Iodin is present in Colloidine in the form of an iodid or a form which so readily yields iodid that the therapeutic effects of Colloidine administration would appear to be that of iodid medication This is demonstrated by the fact that when Colloidine is treated with water all of the contained iodin goes into solution and from this aqueous solution silver nitrate solution precipitates all of the iodin

2 Instead of the claimed iodin content of ⅓ grain (21 6 mg) per tablet, the tablets of Colloidine were found to contain only 15 46 mg (about ¼ grain) or about 72 per cent of the amount claimed

3 Each tablet corresponds in iodin content to 3/10 grain potassium iodid or ¼ grain sodium iodid The largest dose of Colloidine recommended—15 tablets per day in syphilis—corresponds to a dosage of 4½ grains potassium iodid, or 3¾ grain sodium iodid The small dose of iodid administered evidently accounts for the reported absence of symptoms of iodism after the administration of Colloidine

Colloidine is called a

> New Treatment of Rheumatism, Gout Arteriosclerosis Arthritis Asthma Emphysema Scrofula and Syphilis '

Since the chemical examination shows that treatment with Colloidine must amount to the administration of iodid—nothing more—the following claims are unwarranted, they are even absurd

> Colloidine is the most useful medicine for Arteriosclerosis It is not only a marvellous curative for this affection but also an efficacious preventative in functional troubles of presclerosis "
>
> Colloidine facilitates and regulates the menstrual *functions* "
>
> Colloidine constitutes an ideal alterative for purifying the blood '

Finally, the recommendation to depend on Colloidine for the treatment of syphilis is fraught with danger (As remarked before, the maximum daily dose of Colloidine is equivalent to only 4½ grains potassium iodid or 3¾ grains sodium iodid)

> SYPHILIS AND ITS MANIFESTATIONS (Secondary and tertiary stages) Cerebral Syphilis
>
> Dose —Commence with 3 tablets in the morning and 3 tablets in evening increase the dose 2 tablets every 8 days up to 15 tablets a day

continue this dose for a month according to the [*sic*] of the stages of the disease Twice a year in Spring and Autumn undergo two months treatment

"In this affection Colloidine can be substituted for Iodides in permitting the absorption of large doses of Iodine without any toxic symptoms or fatigue whatsoever"

It is recommended that Colloidine be held ineligible for N N R for conflict with Rules 1, 4 and 6

The foregoing report was sent to the American agent for Colloidine, who in the course of time submitted a reply by the manufacturer The reply objected to the method of analysis used and submitted a method It also requested a "test" of Colloidine by "American doctors" and offered to remove conflict with Rule 4 The method of analysis used by the Association's chemists is a standard one, the one proposed by the manufacturers of Colloidine was unsatisfactory and gave variable and lower results The manufacturer was therefore advised that the evidence submitted did not warrant further consideration of the product so far as the therapeutic claims were concerned, but that if evidence showing removal of conflict with Rule 4 was submitted the report would be modified to bring this out No reply having been received to this, the report is now published

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Correspondence

The American Red Cross in Turkey

To the Editor —The American Red Cross had charge of the French hospital of 120 beds, the British hospital of forty beds, and a large section of one of the large military barracks in the city, consisting of nine wards of 556 beds The whole American community in Constantinople showed their interest by cooperating heartily in the work The wounded were brought to Constantinople by Red Cross or Red Crescent ships from the Gallipoli peninsula, and were distributed to the various hospitals, barracks, schools, etc., which, in all parts of the city had been taken over by the militia, and transformed into emergency hospitals The organization of these hospitals, the care of the wounded, the comparative freedom of the Turkish troops from epidemic diseases, all testify to the ability of the Turk to use modern methods of prophylaxis and sanitation in case of necessity That the initiative in this case was taken by the German ally of Turkey is none the less reason for giving Turkey credit for a remarkable piece of work, as for instance the following

Prophylaxis Against Epidemic Diseases in the Turkish Army With the exception of a typhus epidemic in eastern Turkey, there has been no epidemic of consequence among the Turkish troops All soldiers were given prophylactic injections of vaccines for Asiatic cholera, typhoid and dysentery, and were vaccinated for smallpox The smallpox vaccinations, if unsuccessful, were repeated at intervals of a week, for four or five times Three typhoid injections were given at intervals of three or four days, alternating with injections for cholera The dysentery vaccine was given in one injection Two kinds were made, one containing only the Shiga bacillus, and the other being a polyvalent vaccine, consisting of four strains of dysentery bacilli The four vaccinations were completed in the course of ten days Soldiers enlisting from time to time were checked up to see if they had received the prescribed number of injections As to the efficacy of these vaccines, it is hard to judge, except negatively The data available do not give evidence of any persons contracting the diseases after having been treated in the prescribed manner, and it is only negatively possible to conjecture what the result would have been had not the preventive measures been carried out

The Typhus Epidemic in Eastern Turkey It is not generally known that the typhus epidemic in Turkey equaled in severity, if it did not surpass, the Servian epidemic of the same disease, the number of victims being not far from 150,000 from conservative estimates The sacrifice of life was due to the lack of equipment and of men properly trained to fight typhus epidemics, and to the difficulty of transportation in Asia Minor, and added to these, the necessity of Turkey using every resource for her actual fighting forces, and to the fact that in those eastern provinces supplies of soap, fuel and even water were very difficult to obtain Hundreds of physicians and helpers sacrificed their lives in vainly trying to stem the tide Nine of our Americans have succumbed to the disease, among the latter three of our best American physicians in that country It is a sacrifice which might have been averted had they been fully equipped to fight the epidemic In the Erzerum region, the deaths were several hundred per day, the condition of the people as to filth being indescribable Great trenches were dug, and into these trenches were thrown each evening the bodies of the victims of that day When that trench was filled, earth was thrown over the top and another trench prepared The epidemic died out during the summer months, to reappear in the autumn, and is now continuing its ravages

Tetanus in the Turkish Army The large proportion of shrapnel and hand grenade wounds in this war makes the prevention and treatment of tetanus correspondingly important Among the Turkish wounded, the proportion of those who developed tetanus was from 1 150 to 1 200 Prophylactic injections were not generally used in the field hospitals, and in only a few of the hospitals of Constantinople. Antitetanus serum was used in all of our cases, although it did not seem to influence the disease particularly, after the muscle contractions were well inaugurated, as the tetanus poison had evidently so combined with the nerve elements that its neutralization by a serum seemed impossible. The Turkish medical men regard tetanus as highly contagious and rigidly enforce isolation and quarantine of all cases This idea has resulted from so-called epidemics of the disease in hospital wards, the simple explanation being that, in all probability, the instruments or dressings used without careful sterilization between cases is the cause of the "epidemic"

Gas Gangrene Among Turkish Wounded in Constantinople Inquiries as to the frequency of gas gangrene among the wounded in the hospitals in Constantinople gives an estimate of a proportion from 1 200 to 1 250 of all cases One of the Turkish surgeons was treating patients with the actual cautery, cauterizing very extensively and deeply proximal to the margin of the advancing gangrene. He claimed to have saved a number of patients I saved two by high amputation, one was a shoulder disarticulation, the other an amputation at the upper third of the thigh In the latter case, on amputating, one group of muscles on the inner aspect of the thigh was seen to be full of gas This group was removed from its insertion, and the other groups of muscles dissected apart and, the stump being left entirely open, the whole wound was drenched in strong potassium permanganate solution This treatment of the wound was repeated twice daily for several days, recovery being uneventful This muscle infiltration with gas was noticed in other cases, in one of which no crepitation could be elicited above the gangrenous area, which extended half way to the knee At operation, however, amputation at the upper third of the thigh revealed the thigh muscles everywhere infiltrated to such extent that the muscles cut like lung tissue, and the disease was entirely uninfluenced by the operation As with tetanus, I found that tardy gas gangrene developed following operation long after the original gunshot injury I had two such experiences One of these was a case of ununited fracture of the humerus with the severing of the musculospiral nerve and consequent wrist drop I operated about two months after the injury, suturing the nerve and boneplating the humerus Nothing unusual as to the character of the tissues was noticed at the operation There had been no infection in the wound for some weeks preceding operation Infection introduced from without can be ruled out Beginning gas gangrene was noticed the day following operation, and thirty-six hours later the patient succumbed In the light of this unfortunate result, I know of nothing which could have been foreseen as a contraindication to operation, or anything to indicate that this particular patient had lurking within the wound a latent infection of this nature

Spontaneous Healing of Traumatic Aneurysms In The Journal, June 12 1915, p 2026 an abstract of an article by C Longard (*Deutsche medizinische Wochenschrift*, April 15, 1915), informs us that a large artery never recovers spontaneously after being grazed by a bullet so that the wall gives way I wish to report three cases which occurred in my service for the Turkish wounded in Constantinople in which, clinically speaking at least, perfect recovery followed rest in bed and the application of a simple bandage One of these was a pulsating aneurysm of the external carotid of the right side of the neck It was caused by a bullet which passed through the neck, leaving clean entrance and exit wounds There was some general swelling of the soft tissues of the neck, and a visible tumor the size of a small walnut easily compressible with pulsation and bruit plainly transmitted to the examining hand The soldier was under my care for about five weeks, after which he was transferred to a convalescent ward I saw him about two months later ready to return to his regiment His aneurysm had become a hard nonpulsating nodule the size of a small hazelnut, and had given him no trouble whatever The other two cases are practically repetitions of this case except for location one case being a gunshot aneurysm of the popliteal artery of the left leg and the other a gunshot aneurysm of the right femoral artery in the right groin In both these cases as in the first case the aneurysmal tumors were palpable, pulsating compressible and with distinct bruit There was no infection present in any of these three cases The patients were up and about before all pulsation and bruit ceased the patient involuntarily holding the injured limb more or less flexed while walking I have no statistics to show the proportion of these three cases to those which have come to operation

A R Hoover, M S, M D, Auburndale, Mass

So-Called "Incipient" Tuberculosis

To the Editor —Dr Ritter's criticism of the expression 'incipient pulmonary tuberculosis' (The Journal, Feb 19, 1916, p 592) is timely In a paper read before the San Francisco County Medical Society last October (*California State Journal of Medicine*, 1916, xiv, 20), I called attention to the fallacy of using this term in describing a condition, the pathology of which was sufficiently advanced to give rise to demonstrable physical signs At this time I ventured the opinion that "when it is generally recognized that tuberculosis obtains foothold first in infancy or early childhood, and when its pathology and the manner in which it spreads are more thoroughly understood, the term 'incipient' will not have the prominent place in medical nomenclature it now possesses There will then be a general recognition of the fact that true incipiency in lung tuberculosis is not clinically demonstrable ' It is inconsistent to plead for exact methods in diagnosis, based on a more accurate knowledge of the underlying pathology, and retain a nomenclature as misleading as the term "incipiency" when applied to clinically demonstrable active tuberculosis

George H Evans, M D., San Francisco

Multiple Metastatic Sarcomas of the Lungs

To the Editor —In the article by Drs Holt and Ratterman on this subject (The Journal, Jan 15, 1916, p 171), statement is made that "sarcoma of the lungs, whether primary or secondary, is very rarely found" These authors report a case of multiple metastatic sarcoma of the lungs very fully and carefully I wish to take exception to the statement regarding the frequency of secondary sarcomas of the lung, and in reply assert that not only are they relatively common but also they are to be looked for in every case of primary sarcoma, especially of the bone The lungs are a characteristic location for secondary metastases in sarcoma for the reason that this type of neoplasm early invades blood vessels and especially the thin walls of veins The wall is invaded by the advancing malignant growth, and the round or spindle cells are caught in the blood stream and transported through the heart to the lungs, whose capillaries act as a filter and retain the embryonic cells Here they proliferate and form secondary nodules The lungs in sarcoma play an analogous role as a filter to the regional lymph glands in carcinoma, whose metastases travel by way of the lymphatics instead of the blood stream A second pathway of conduction for metastases of sarcoma to reach the lung is through the thoracic duct, and in the case of lymphosarcomas of the mediastinum, the lymphatics may even act as conductors of metastases to the lungs I have seen a number of cases of multiple metastases in the lungs and we have had an example during the past month among our necropsies at the Cook County Hospital We may explain the paucity of reported cases not so much because of their rarity as because of their frequency

Harry Jackson, M D, Chicago

Crown Gall and Cancer

To the Editor —Recently I have made discoveries which tie crown gall of plants closer to cancer of man and animals I can now produce embryonic teratomas at will by bacterial inoculations All that is necessary is to inoculate growing plants in areas containing dormant totipotent or pluripotent cells using *Bacterium tumefaciens* Moreover, as in man, daughter tumors are produced freely, and these also contain teratoid elements These results have been obtained repeatedly during the last two months on pelargonium, tomato, tobacco and citrus A full account will be published within a short time

Erwin F Smith,
Bureau of Plant Industry,
Laboratory of Plant Pathology,
Washington, D C

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request

FIRST ROENTGENOGRAMS OF BLADDER

To the Editor —1 Who was the first to take a roentgenogram of the urinary bladder filled with an opaque mixture?

2 Who was the first to demonstrate a diverticulum of the urinary bladder in this manner? What was the date of this demonstration?

J M Garratt M D Buffalo

Answer —1 Teissl, in the *Wiener medizinische Blätter*, 1902, No 10 published an article in which he described a method of filling the bladder with mercury and taking roentgenograms His experiments were done on the cadaver

2 Perthes in an article on Congenital Diverticula of the Bladder" (*Deutsche Zeitschrift fur Chirurgie*, 1909, c, 253), presented some good roentgenograms of the bladder made by filling the bladder with 5 per cent collargol The pictures show the outline of the bladder very nicely, and also the outline of the diverticulum Perthes claimed in this article that these were the first roentgenograms taken in this way showing diverticula of the bladder, and they are the earliest that we have been able to find in the literature

INJECTIONS OF HOT WATER IN GOITER

To the Editor —Please tell me the status of operation for goiter by injection of hot water or other medium The patient in whom I am interested refuses absolutely any cutting operation The case is apparently a favorable one being small unilateral and to the touch cystic

William Fawcett Smith M D, Calexico, Calif

Answer —The treatment of goiter by the injection of hot water has been followed by very good results when a proper selection of cases has been made, not all cases are suitable for this kind of treatment Hot water injections should not be used in the ordinary large nontoxic goiter, these cases are best treated by removal The method is particularly applicable to toxic goiters—to the small toxic goiters with not very severe symptoms, and to the larger toxic goiters with severe symptoms, so severe as to make the operative risk very great These cases may often be improved by injections of boiling water, so that they become good operative risks In some cases in which operation has been performed and a portion of the gland removed, but in which complete subsidence of symptoms has not taken place—evidence of hyperthyroidism still remaining after recovery from the operation and proper rest and treatment—if the remaining portion of the gland is injected with boiling water, its function may be still further reduced and complete recovery result An excellent article on the subject by Dr Miles F Porter, giving technic and showing what can be accomplished with the method, may be found in *Surgery, Gynecology and Obstetrics,* January, 1915

ARTICLES ON INTERNAL SECRETION

To the Editor —Please refer me to reliable recent literature on the ductless glands and internal secretions

Carl Stutsman, M D, Burlington, Iowa

Answer—A list of articles on this subject was published in The Journal, July 26, 1913, p 294 The following articles have appeared subsequent to that date

McIlroy, A L *Jour Obst and Gynec of Brit Emp*, May, 1913, abstr, The Journal, July 26, 1913, p 309

Murray, G R Some Aspects of Internal Secretion in Disease *Brit Med Jour* July 26, 1913, abstr, The Journal, Aug 23, 1913, p 623

Discussion on Internal Secretions, Seventeenth International Medical Congress, abstr, The Journal Aug 30 1913, p 698

Schitz, C Cataract and the Internal Secretions *Norsk Mag f Lægevidensk*, September, 1913, abstr, The Journal, Oct 18, 1913 p 1499

Brickner, S M Role of Glands of Internal Secretion in Genesis of Fibroma Molluscum Gravidarum, *Surg Gynec and Obst*, October, 1913, abstr, The Journal, Nov 15, 1913, p 1846

Human Pancreatic Secretion, editorial, The Journal, Dec 13, 1913, p 2161

Lehmann, F Habitual Abortion in Connection with the Internal Secretions *Arch f Gynäk*, ci No 1, abstr, The Journal, Jan 17, 1914, p 244

Guggisberg, H Action of Internal Secretions on the Activity of the Uterus, *Ztschr f Geburtsh u Gynäl* lxxv, No 2, abstr The Journal Feb 14, 1914, p 581

The Entrance of the Internal Secretion of the Pancreas into the Circulation, editorial The Journal, April 25, 1914 p 1334

Auer, E M Psychic Manifestations of Disease of Glands of Internal Secretion, *Am Jour Insan*, October, 1914, abstr, The Journal, Nov 21 1914, p 1879

Pribram H The Status Lymphaticus and Its Relation to Pluriglandular Disease *Ztschr f klin Med* 1915, lxxxi, No 2 abstr, The Journal Feb 27 1915 p 783

Peiser, H Disturbance in Internal Secretion in Dysentery, *Deutsch med Wchnschr* Jan 14, 1915, abstr, The Journal, April 24 1915 p 1457

Fry H J B Pituitary Gland in Diabetes Mellitus and Disorders of Glands of Internal Secretion *Quart Jour Med*, July, 1915 abstr, The Journal Aug 7, 1915 p 561

Osokin N E The Thyroid Secretion in Normal and Pathologic Conditions Russk Vrach, March 28, 1915, abstr, The Journal Aug 28, 1915 p 835

Allen, C L Delusions of Persecution as a Biologic Defense Reaction The Journal, Sept 4, 1915, p 866

BULGARIAN BACILLI IN MILK

To the Editor —It has been suggested that unless sweet milk into which Bulgarian bacilli are to be placed is first brought to the boiling point and then cooled before the bacilli are put into the milk the bacteria already in the milk will eventually destroy the Bulgarian bacilli, and instead of the milk being beneficial it will be harmful to those who drink it It has also been suggested that the destruction of the Bulgarian bacilli will not be noticed as the other bacteria take their place Can you advise me regarding both of these subjects

H F Thiel M D, Creston, Wash

Answer—There is no doubt that better results will be obtained in drinking milk containing Bulgarian bacilli if the milk is first boiled The objections noted by our correspondent to the use of sweet milk for this purpose are quite justified, and the same objection applies in lesser degree to the use of pasteurized milk It may be noted also that the Bulgarian bacillus is favored by a rather high temperature of incubation, from 110 to 115 F being most satisfactory

GROUND GLASS AS A REMEDY

To the Editor —Some time ago a correspondent inquired as to the use of ground glass (The Journal, Nov 15, 1915, p 1837) I have had two such cases, both in foreigners, one a Slovak An old lady prescribed it for her husband, who was suffering from a violent diarrhea As accurately as I could ascertain, it is not an uncommon remedy among the peasants of eastern Europe

J H Mackay, M D, Houston, Texas

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona Phoenix, April 4 5 Sec, Dr John Wix Thomas, 200 National Bank of Arizona Bldg, Phoenix

California Los Angeles, April 4 Sec, Dr Charles B Pinkham Room 527 Forum Bldg, Sacramento

Colorado Denver, April 4 Sec, Dr David A Strickler, 612 Empire Bldg, Denver

Connecticut Regular New Haven, March 14 15 Sec, Dr Charles A Tuttle, 196 York St, New Haven Homeopathic New Haven March 14 Sec., Dr Edwin C M Hall 82 Grand Ave, New Haven Eclectic, New Haven, March 14 Sec, Dr T S Hodge, 19 Main St Torrington

District of Columbia Washington, April 11 Sec., Dr E P Copeland, The Rockingham

Idaho Boise, April 4 Sec., Dr Charles A Dettman Burke.

Maine Portland, March 14 15 Sec, Dr Frank W Searle, 776 Congress St, Portland

Massachusetts Boston, March 14 16 Sec, Dr Walter P Bowers, Room 501, No 1 Beacon St, Boston

Minnesota Minneapolis April 4 7 Sec. Dr Thomas S McDavitt, 814 Lowry Bldg, St Paul

Missouri St Louis, March 20 22 Sec, Dr J A B Adcock, State House, Jefferson City

Montana Helena, April 4 Sec, Dr William C Riddell Helena

New Mexico Sante Fe, April 10 Sec, Dr W E Kaser, East Las Vegas

Oklahoma Oklahoma City, April 11 12 Sec Dr Ralph V Smith, 502 Daniel Bldg, Tulsa

Porto Rico San Juan, April 4 Sec, Dr Quevedo Baez, 66 Allen St, San Juan

Rhode Island Providence, April 6 Sec, Dr Gardner T Swarts 315 State House, Providence

Utah Salt Lake City April 3 4 Sec, Dr G F Harding, 407 Templeton Bldg, Salt Lake City

Wyoming Laramie, March 14 16 Sec, Dr H E McCollum, Laramie

Missouri September Report

Dr J A B Adcock, secretary of the Missouri State Board of Health, reports the oral and written examination held at Kansas City, Sept 28-30, 1915 The total number of subjects examined in was 14, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 33, of whom 24 passed and 9 failed, for one candidate the name of the college was not obtained One candidate was granted a reregistration license The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Bennett Medical College	(1910)	75, 84
Hahnemann Medical Coll and Hosp, Chicago	(1888)	75
Illinois Medical College	(1909)	79*
Kansas City Hahnemann Medical College	(1914)	76
Missouri Medical College	(1877)	75
National University of Arts and Sciences	(1915)	82 82 83, 86
St Louis College of Physicians and Surgeons	(1915)	80
St Louis University	(1915)	82, 85
John A Creighton Medical College	(1915)	77
Columbia University College of Phys and Surgs	(1905)	85
Jefferson Medical College	(1915)	88
Temple University	(1915)	92
Meharry Medical College	(1915)	76 78
University of West Tennessee	(1915)	76 76 79
Milwaukee Medical College	(1910) (1911)	79* 79*
FAILED		
Tulane University of Louisiana	(1913)	†
Kansas City Hahnemann Medical College	(1915)	‡
St Louis College of Physicians and Surgeons	(1915)	73, 74
Meharry Medical College	(1915)	70 72
University of West Tennessee	(1914) (1915)	70, 73

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* Official reports do not contain the names of these candidates as graduates

† Did not complete examination on account of sickness

‡ No grade given

Maryland Homeopathic December Report

Dr O N Duvall secretary of the Maryland Homeopathic Board of Medical Examiners, reports the written examination held at Baltimore Dec 17-18, 1915 The total number of subjects examined in was 8, total number of questions asked, 80 percentage required to pass, 75 The total number of candidates examined was 3, of whom 1 passed and 2 failed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
New York Homeo Med Coll and Flower Hosp	(1915)	86 6
FAILED		
Atlanta Medical College, Baltimore	(1910)	65 70 9

Book Notices

The Treatment of Acute Infectious Diseases By Frank Sherman Meara M D Ph D Professor of Therapeutics in the Cornell University Medical College in New York Cloth Price, $3 50 Pp 540 New York The Macmillan Company, 1916

In his preface, the author says that this book must be looked on as an expression of his individual opinion and that it is didactic rather than critical The book for the most part conveys this impression, and the reader feels that he is receiving the benefit of the advice of one who has been an acute and skilful observer of much clinical material The author has evidently tried to make his treatment appeal to the intelligence of the reader, and he has made every effort to explain why certain things are done under certain conditions Numerous errors, due to careless proofreading are to be noted, as on page 499, The duration averaged 14 44%", page 274, milk of magnesiae," etc There are some errors in chemical formulas These, of course will be corrected in a new edition The disinfection advised after the various contagious diseases is sometimes quite extreme as compared with that usually considered sufficient by sanitarians at the present time For example, quarantine after measles is to be terminated after a bath of 1 5,000 mercuric chlorid, and fumigation is advocated after diphtheria and scarlet fever The author insists that 'full duty to the public who trust the physician is done only when he changes his clothes and better takes a full bath before seeing other children" after visiting a patient with scarlet fever During the visit the physician has been properly protected by gown cap and rubber gloves, and perhaps rubber shoes It is difficult to imagine what advantage would be gained by a full bath under these circumstances Perhaps it would not be so useless as the old measure of placing a board over the chimney of a house to protect passers-by from the contagion of scarlet fever from a case within the house 'Urotropin" and 'diuretin" are used instead of the correct U S P names and proprietary names for therapeutic agents are often employed Sometimes minor matters are given undue importance, as when in several instances a separate paragraph is devoted to the discussion of the proper night gown which heads the paragraph in bold-face type This book will appeal to general practitioners bacause of its reliable advice, which can be secured with little reading

The Adolescent Period Its Features and Management By Louis Starr M D LL.D Cloth Price $1 net Pp 211 Philadelphia P Blakiston s Son & Co 1915

Like Dr Starr's earlier book, "The Hygiene of the Nursery" this book is written "for parents, nurses and all interested in the care and management of children" and youth Social workers and teachers of adolescent pupils are included in the list of those interested For parents, nurses, social workers and teachers, the counsel given by the author, especially in the chapters on growth, physical education, diseases of adolescence faults of adolescents, menstruation and sexual enlightenment make the book a valuable contribution The author wisely urges the necessity of the instruction of every child and youth regarding the facts of reproduction, and through wise, sympathetic teaching by parents in the home to implant in the mind of the child that wholesome point of view which is the surest way to vouchsafe right thoughts and habits regarding sex The critical professional reader cannot suppress a sincere regret that the author has failed to note that the formation of internal secretions by testes and ovaries has several years since been positively demonstrated to control the development of the distinctively masculine or feminine qualities, respectively, during adolescence and to insure the full maintenance of these qualities throughout adulthood to the onset of senility The author refers, however, to phenomena of castration as "tending to uphold the theory" of an internal secretion Certain other technical slips of minor import may easily be overlooked in view of the distinct value of the little volume as a physician's wise counsel regarding facts of fundamental importance in the leading of the child and youth through a critical period

Leukemia of the Fowl Spontaneous and Experimental By Harry C Schmeisser, M D The Johns Hopkins Hospital Reports Monographs, New Series, No 8 Paper Price, $2 00 Pp 34, with 6 illustrations Baltimore The Johns Hopkins Press, 1915

This monograph consists of a review of the limited existing literature on the subject indicated by the title, the report of a single case of the disease occurring spontaneously, and the results of a series of inoculations into other fowls Its chief importance lies in the fact that it corroborates the reported existence of a disease in fowls resembling closely human leukemia, and transmissible to other fowls by direct inoculation The existence of such a transmissible disease is important for medical research, since it makes possible experimental work in leukemia Whether or not fowl leukemia is the same as mammalian leukemia, and especially human leukemia must still be considered as not entirely settled There are certain important discrepancies which may or may not be explained as due to differences in the subject rather than the disease, for example the duration of the disease varies from three to thirty-two days usually from one to two weeks Schmeisser does not record any study on the filterability of the virus, as reported by others, or special research into the etiology of the disease The paper is more confirmatory than exploratory, but is a distinctly accurate and reliable contribution to a subject that may be as important in the future of leukemia as mouse tumors have been in the development of cancer research

Manual of Embryology By A Melville Paterson M D, F R C S, Professor of Anatomy in the University of Liverpool Cloth Price $2 75 Pp 391, with 304 illustrations New York Oxford University Press 1915

This brief compendium is an anatomist's presentation of embryology to medical students The facts are marshaled in an exceptionally clear and concise manner with particular reference always to the practical side of the subject, namely, the elucidation of otherwise meaningless anatomic detail and the explanation of many abnormalities Every word is significant, for the condensation of a wealth of material into a few words has been done by a master in the art of teaching The book is not intended for those who have the privilege of studying embryos or fetuses The original illustrations are for the most part needlessly inaccurate diagrams, the majority of the good cuts were copied from Keibel and Mall's 'Handbook of the Development of Man" There are some serious errors, due apparently to the author's meager first hand knowledge of his subject The drawing of a three months' human fetus (Fig 34), for example, is inexcusably wrong, as is the statement (p 97) that the telencephalic vesicles become extraordinarily convoluted during the first month" As one might expect from the author's point of view, there is no mention of embryologic or of pertinent biologic theory

Orthopedic Surgery By Edward H Bradford, M D, Consulting Surgeon to the Children s Hospital Boston and Robert W Lovett M D Professor of Orthopedic Surgery in Harvard University Fifth Edition Cloth Price $3 75 net Pp 416 with 369 illustrations New York William Wood & Co 1915

The new edition of this work is abridged by the omission of many references and much of the discussion of the views of other writers As a standard textbook for the use of students, it remains satisfactory As a reference book for practitioners, it leaves much to be desired Some of the descriptions of operations and methods of treatment are not sufficiently detailed to be of service The chapter on congenital clubfoot is especially weak in this regard The Hibbs operation for spinal tuberculosis is described as originally performed, no mention being made of the modifications introduced since 1911 The technic of plaster of Paris work and the details of mechanical apparatus are handled in too general a manner The presswork is excellent, but the proofreading has been somewhat careless For instance, on page 361, line 11, "tendon" should be "tenotome" The illustrations are many and well chosen The vast experience of the distinguished authors makes it certain that their views on disputed subjects may be accepted as the standard

Medicolegal

Breaking of Stitches and Opening of Wound Not Covered by Accident Insurance

(Stokely vs Fidelity & Casualty Co of New York (Ala), 69 So R 64)

The Supreme Court of Alabama affirms a judgment in favor of the defendant, which was sued on a policy of insurance issued by it against "bodily injury sustained through accidental means and resulting directly, independently, and exclusively of all other causes in death" The court says that the evidence showed that the insured had an operation performed for appendicitis and for four or five days went along without apparent complication and with every promise of a rapid recovery, but when the surgeon visited him on the morning of the fourth or fifth day the man vomited and coughed for a spell and then complained of some pain On examination it was found that the wound had opened and the patient's intestines were protruding through it Immediately he was again anesthetized and the wound closed, but he never recovered consciousness and died in the course of a few hours The surgeon testified that he saw no reason in the world why the patient should not have recovered, had the stitches in the wound not broken There was nothing else wrong with the patient—by which, of course, the witness meant nothing wrong as operations for appendicitis go To sum up, the witness was of the opinion (and this is clear even to the nonprofessional mind) that the patient's disease brought on the first operation, the coughing and vomiting burst the stitches, bringing on the second anesthetic and the second operation, and at the end of the sequence came death There would have been no stitches, nor any rupture, but for the disease and the wound it made necessary Nor would there have been any coughing or vomiting, though it is not supposed that these were accidents or the result of an accident, had not the disease made the administration of an anesthetic and the performance of the operation necessary The rupture of the stitches, if an accident in any proper sense, was not an accident causing bodily injury and death, it was merely the failure of means taken to prevent a death threatened by other independent causes The death which followed was undeniably and in a most material way contributed to, if not exclusively caused by, the disease with which the insured was afflicted and the means taken for his relief The court is clear to the conclusion that, if there was any accident in this case, it was not an accident causing bodily injury and resulting directly, independently and exclusively of all other causes, in death within the meaning of the policy

Sufficient Evidence of Malpractice in Treatment of Fracture

(Wilk vs Black (Mich), 154 N W R 561)

The Supreme Court of Michigan, in affirming a judgment for $2,250 in favor of the plaintiff says that the important question was Was there evidence of negligence sufficient to carry the case to the jury? The action was brought to recover damages for alleged malpractice in the treatment of a fracture of the ulna and radius of the left forearm, which the plaintiff, 22 years of age, sustained by being thrown from a horse at a farm 8 miles from the village where the defendant practiced his profession Within two or three hours after the accident the defendant treated the fracture The plaintiff returned the following Monday, when the defendant examined the arm without taking off the splints and told him that the arm seemed to be all right, to be careful with it, and to come again in about two weeks The plaintiff made his next and last visit to the defendant November 2, at which time the splints were removed, the arm examined, and the defendant claimed he found it to be perfect, the bones straight and in normal condition The defendant assured the plaintiff that the arm was coming on all right and directed him to come back again in two weeks and he would take off the splints The plaintiff claimed that at that time there was a lump on the arm He also asked if he could not take off the splints himself, and the defendant said that he told him he could if he wanted to and was satisfied that the arm was all right, but, if he wasn't, the defendant wanted him to come right back The plaintiff did not return for several months, when he came to demand a settlement, being accompanied by his attorney, who exhibited a roentgenogram of the arm made May 13 The plaintiff claimed to have worn the splints continuously from the time of his last visit to the defendant until the morning of November 28, when he took them off and discovered a bunch on the inner side of the arm, and immediately went to consult another physician The roentgenogram showed a complete fracture of the bones, and there was testimony that the arm would always be crooked The defendant, however, described the fracture as a green stick fracture, claimed that he had properly treated the arm, and contended that its condition when suit was brought was caused by one of three things (1) that the plaintiff injured his arm by working after the injury, (2) that the plaintiff injured his arm while it was in splints on the way home from a dance, (3) that the plaintiff removed the splints himself, and thus caused the injury Without stopping to go into detail, the court thinks the trial judge very properly concluded that there was a cause for the injury Nor does it agree with the contention that the skill of the defendant was not in issue There was testimony that when he first set the arm he used splints that were too short There was also testimony that he assured the plaintiff his arm was all right when a bunch of prominence had appeared on it showing that it needed further attention Neither can the court say that the trial judge abused his discretion in refusing to grant a new trial on the ground that the verdict was excessive

Death from Having Chloroform Administered by Person Neither Physician nor Trained Nurse

(Roughlin vs State (Ga), 86 S E R 452)

The Court of Appeals of Georgia reverses a judgment of conviction of the defendant, Roughlin, who was charged with involuntary manslaughter in the commission of a lawful act, namely, the circumcising of a named person, administering chloroform and having it administered to him by one who was neither a physician nor a trained nurse But the presentment, the court holds, did not constitute a good accusation because the allegations were insufficient to inform the accused of the circumstances of the transaction in which he was alleged to have violated the law, so as to enable him to prepare his defense, and the defendant might have admitted the statements of fact contained therein without subjecting himself to any criminal liability There is no law of the state of Georgia declaring the administration of chloroform by one who is neither a physician nor a trained nurse to be unlawful Consequently, all that was stated on that subject in the presentment in the case was a mere conclusion of the pleader

Furthermore, one charged with the offense of involuntary manslaughter in the commission of a lawful act, by negligently permitting the administration of chloroform by an assistant not qualified to administer it, is entitled to know the name of the person who is referred to as having actually administered the chloroform, so as to enable him properly to prepare for trial To leave the defendant in the dark as to the identity of this undisclosed individual might be to face him with a witness whose testimony he was wholly unable to meet and whose credibility he was not prepared to impeach Besides, presuming that the defendant did the acts alleged, it might be assumed that he already knew whom he had to administer the chloroform, but the defendant's plea of not guilty put in issue every material allegation in the accusation against him, and, since the innocence of one accused of crime must always be presumed it could not be assumed that the defendant knew who administered the chloroform or that any chloroform was, in fact, administered at all One accused of crime has the right, if he demands it by timely demurrer, to have the accusation perfect in both form and substance

Society Proceedings

COMING MEETINGS

American Medico Psychological Association New Orleans April 4 7
American Urological Association St Louis April 17 19
Arizona Medical Association Phoenix April 26 27
Arkansas Medical Society Texarkana May 2 4
California State Medical Society Fresno April 18 20
Georgia Medical Association Columbus April 19 21
Kansas Medical Society, Topeka May 3 5
Louisiana State Medical Society New Orleans April 18 20
Missouri Valley Medical Society St Joseph Mo March 23 24
North Carolina State Medical Society, Durham April 19
South Carolina Medical Association Charleston, April 18 20
Tennessee State Medical Association Knoxville April 4 6

CHICAGO MEDICAL SOCIETY

Regular Meeting held March 1 1910

The President, Dr Charles F Wheeler, in the Chair

Trichinosis, with Remarks on Diagnosis

Dr Leon Bloch My report includes a series of twenty-nine cases that have occurred in the last two and a half years at the Cook County Hospital All but three patients were of foreign birth, three were children, and twenty six were adults whose ages ranged from 18 to 51 The facts pointing toward trichinosis were the history of eating raw pork in thirteen cases, gastro-intestinal disturbances such as nausea vomiting diarrhea or constipation or abdominal pain in thirteen, muscle pains, either subjective or objective, referable to the arms legs jaws, neck or chest, in twenty-six edema, noticed by the patient or the examining physician in seventeen cases, prostration from inability to use the muscles together with toxemia in three, high temperature and low pulse rate in thirteen, profuse sweats in seven, splenic enlargement in twelve, diazo test positive in all of five cases tested, eosinophilia in all, leukocytosis above 10 000 in twenty-three, and the demonstration of the trichina in the muscles in twenty-three in the spinal fluid in two in the stool in two and in the blood in one Differentiation of trichinosis from typhoid fever, pneumonia nephritis, endocarditis and multiple neuritis can be readily made by careful attention to the symptoms and signs of these conditions, and by attention to the blood and muscle examination In one case of trichinosis there were symptoms of cortical involvement, such as general and unilateral convulsions hemiplegia and death Postmortem examination showed marked hyperemia of the cerebral cortex, especially the right half

DISCUSSION

Dr Maximilian Herzog Trichinosis is not so rare as it is supposed by most practitioners The clinical history and the signs and symptoms of trichinosis are such that the diagnosis is very difficult However the diagnosis becomes easy if proper laboratory methods are used, particularly in examining the stools and the blood The number of cases reported in the literature in the United States since the report of the first case was published in 1842 is 1,550, with 240 deaths From these figures the impression is created, first, that the disease is comparatively rare and second, that the mortality is high Both impressions are erroneous The disease is not so rare as one would imagine, and the mortality is not high save in exceptional cases

Recognition and Treatment of Ectopic Gestation

Dr. E. E Montgomery, Philadelphia The termination of tubal pregnancy, either by rupture or tubal abortion, should be suspected when a woman has passed one or two periods, has suspected she was pregnant, has general digestive or nervous symptoms, has felt more or less discomfort in one or the other side of the pelvis, has been taken with sudden, severe, lancinating pain which has rendered her unconscious or caused her to drop in a faint, when her pulse becomes feeble, even absent at the wrist, her skin blanched and covered with perspiration, and when she is unable to raise her head without the sensation of fainting, possibly remaining unconscious Such symptoms, even though the patient has not missed a period, should lead to the suspicion of internal hemorrhage, of which ectopic gestation is, with extremely rare exceptions, the cause

My greatest solicitude during recent years has not been awakened by the patients on whom I have operated early, even though in shock, but by those seen late or when for some reason the surgical treatment has been deferred The patient is too much depressed to be influenced by fear of the operation The administration of ether in small quantity under such circumstances is a stimulant, while the vessels are being filled with saline solution The prime consideration is expedition no time is to be lost in the removal of the fluid blood, its presence will aid in the more rapid resuscitation when infection has been avoided The abdomen may be filled with salt solution before the wound is closed, and its completion should be followed by the Murphy drip The first consideration is the arrest of the hemorrhage and to place the patient in such a position that her powers can be strengthened Stimulants should not be given A sedative should be administered A vessel is open and the only hope for relief outside its direct control by clamp or ligature is through the formation of a clot whose further action increased blood pressure will imperil As it cannot be assumed in any case that the clotting will be effective in the control of the hemorrhage, the greatest certainty is through efficient closure of the bleeding vessel through its ligation, and measures should be employed to secure this under the most favorable circumstances When it is not practicable to secure immediate surgical relief, the patient should be placed under the influence of morphin and be kept free from annoyance until she can be placed in proper environment for surgical measures Immediately preceding, or simultaneously with the incision of the abdomen active stimulation, the most efficient of which is the intravenous transfusion of saline solution to which epinephrin has been added, should be begun and continued during the operative procedure by which any additional shock through operation is more than counteracted Even though it is apparent that operation is not needed to insure against further hemorrhage, to open the abdomen is advisable for the removal of large quantities of clotted blood as the forces of the patient are relieved from its care and disposal

DISCUSSION

Dr Channing W Barrett Oftentimes it is not one large rupture that takes place in extra-uterine pregnancy but a series of ruptures About 75 per cent of the cases have shown definite or strongly implied gonococcic infection Just why the cases which furnish the 15 per cent should be counted the atypical cases, and the class of cases that furnish 85 per cent should be regarded as typical, I cannot understand I should say that the first 15 per cent are the typical severe cases, and the 85 per cent in which the patients have one rupture and recover, and then another and recover, are the typical mild cases If this thought is borne in mind, it will aid in making the diagnosis As to treatment, I do not believe we should operate on a patient just because we are suspicious of the existence of a little pelvic trouble If the diagnosis is clear, it is better to operate before rupture has taken place, or after the patient has recovered from the rupture Nothing in the way of non-operative treatment takes the place of ligating vessels that are bleeding Nothing short of putting clamps or ligatures on bleeding vessels is going to save a moribund patient

Dr. Carey Culbertson Gonorrhea is a suppurative infection, and only secondarily complicated by colon bacillus infection The typical gonorrheal tube is a pus tube. Pyosalpingitis destroys the tube as an oviduct, and when it has been destroyed as an oviduct, pregnancy of any sort is impossible There are various degrees of gonorrheal infection In all cases the infection is not equally virulent or the same in the pathologic condition which it produces I do not mean to imply that the gonococcus is not responsible in any degree for ectopic gestation, but a tube which makes tubal pregnancy possible must be patent, and at the same time diseased In many cases a tube showing salpingitis, which is slightly adherent, kinked and markedly convoluted, is nevertheless patent I believe there is a focal infection in the tube the same as has been demonstrated to exist in the appendix and various other portions of the anatomy, and I see no reason why that type of tube should not be the one to make tubal pregnancy possible. As a rule, the opposite tube is more markedly diseased than the one in which the gestation has taken place, and in certain instances it may become necessary to sacrifice both tubes.

Dr. Henry F. Lewis: All women who have symptoms that point in any way toward ectopic gestation should be subjected to examination, and should be impressed with the importance of consulting an obstetrician very soon after they expect themselves to become pregnant. The diagnosis of ectopic pregnancy is made oftener at operation than before it. Usually, the symptoms are not typical of rupture or of marked abortion, and the symptoms of marked abortion and rupture are not such as to make it easy to tell before operation whether rupture or abortion has taken place. In many cases of abortion the symptoms are not severe. Likewise, the symptoms of rupture are not severe. There are cases in which the rupture is only slight, followed by a slight hemorrhage. The majority of ruptures take place in the isthmian portion of the tube, while other ruptures take place in the ampulla, which permits of greater distention.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

February, XXXIX, No. 4, pp. 355-502

1 *Influence of Heavy Metals on Isolated Intestine. W. Salant and C. W. Mitchell, Washington, D. C.
2 Nerve Conduction and Other Reactions in Cassiopea. A. G. Mayer, Washington, D. C.
3 *Effects of Testicular Transplants on Vasomotor Irritability. H. Wheelon and J. L. Shipley, St. Louis.
4 Studies in Blood Pressure Estimations by Indirect Methods. Mechanism of Oscillatory Criteria. J. Erlanger, St. Louis.
5 *Effect of Nicotin on Reflex Action of Cutaneous Sense Organs. I. Howat, Kansas City, Kan.
6 *Coagulation of Blood in Pleural Cavity. G. P. Denny and G. R. Minot, Boston.
7 *Direct Evidence of Duodenal Regurgitation and Its Influence on Chemistry and Function of Normal Human Stomach. W. H. Spencer, G. P. Meyer, M. E. Rehfuss and P. B. Hawk, St. Louis.
8 *Liver Circulation in Relation to Glycemia. H. McGuigan and E. L. Ross, Chicago.

1. **Influence of Heavy Metals on Isolated Intestine.**—Salant and Mitchell found that zinc is a powerful depressant, exposure to very dilute solutions for thirty to forty-five minutes causing decreased contractility of the intestine, from which it only partly recovers on changing to pure Locke's solution. Medium concentrations of zinc may completely and permanently abolish contractions. Dilute solutions of nickel acetate may stimulate intestinal contractility after causing primary depression. Only the more concentrated solutions inhibit muscular activity but considerable improvement was observed when changed to pure Locke's solution. That nickel is much less toxic than zinc was also shown by the reaction of the intestine to barium chlorid and pilocarpin, response to these agents being obtained after treatment with a much more concentrated solution of nickel acetate than of zinc malate. The reaction to barium persisted longer than the response to pilocarpin after the intestine was exposed to the influence of zinc and a concentrated solution of nickel acetate. The intestine of the cat is more resistant to the action of zinc than that of the rabbit. The difference is not so marked in experiments with nickel. The ileum and colon were more resistant both to the action of zinc and the depressing effect of higher concentrations of nickel.

3. **Effects of Testicular Transplants on Vasomotor Irritability.**—The findings of Wheelon and Shipley point to the conclusion that a direct relationship does exist between the internal secretions of the testis and the sympathetic nervous system. Castration results in a depressed activity of the nervous mechanism while subsequent establishment of the lost parts tends to lift the depression and at least partially to reinstate normal activity.

5. **Effect of Nicotin on Skin Reflexes in Frog.**—Howat found that small doses of nicotin cause a depression or loss of the reflexes, fibrillar contractions, forced respiration and a slight constriction of the pupils. One dose did not usually show an increased irritability as an after effect. These changes appear immediately after injection, and last from one half to three or four hours, depending on the dose. Doses of one-half minim of 0.05 per cent. per 10 gm. frog have a greater effect than larger doses of Ringer's solution. Large doses of nicotin cause an entire loss of the skin reflexes, and muscle tone, producing a flattened position, an inhibited, then irregular respiration, constriction of the pupils, loss of turnover, compensatory and equilibrium reflexes, a tetanus or stiffening of the front legs, followed by a relaxation and loss of muscle tonus. Continued gradually increasing doses of nicotin cause tolerance to the drug, such that it loses some of its effect. Continued use of nicotin causes increased irritability of the skin reflexes, making them respond abnormally. It also causes a loss of weight, and a discoloration of the skin. The effect on respiration and constriction of pupils is the same as in a normal frog, except that the effect does not last so long. The toxic dose obtained from the results of a large number of experiments, showed that it varied from 6 to 27 minims of 1 per cent. nicotin per 10 gm. frogs. Some frogs naturally proved more resistant than others. For those frogs which had been given continued gradually increasing doses, the toxic injection varied from 6 to 9 minims of 1 per cent. per 10 gm. frog. Nicotin acted as an accumulative drug, lessening the bodily resistance until the toxic dose is found to be less for the tolerant frog than for the normal one. Nicotin is much more powerful in its effects on cutaneous reflex reactions, ciliary muscles, respiratory activity and bulbar centers than is alcohol.

6. **Coagulation of Blood in Pleural Cavity.**—It is held by Denny and Minot that small amounts of blood introduced slowly into the pleural cavity when deep artificial respiration is maintained will remain in large part fluid. Small clots are always found in the pleural cavity, the size depending on the amount of blood injected and the rapidity of injection. The fluid portion of the blood can only be clotted by addition of fibrinogen. Thrombin, calcium and thromboplastin are incapable of causing coagulation. The blood shows absence of fibrinogen which perhaps may be removed in some way other than by coagulation. Pure fibrinogen solution which has been in the pleural cavity under the same conditions, is not only altered, but clots more readily than the control on adding suitable amounts of thrombin. Small amounts of thrombin and fibrinogen when mixed in suitable proportions and injected slowly into the pleural cavity remain fluid and show an absence of fibrinogen. Since it has been shown that fibrinogen alone loses none of its properties after remaining in the pleural cavity, and that the presence of thrombin under the same conditions causes a disappearance of fibrinogen, the authors can only conclude that coagulation has taken place. The experiments with artificial solutions exactly parallel those with whole blood, the conclusion being that blood which has been in the pleural cavity remains fluid, not because of any alteration of the elements, but because of previous coagulation and defibrination.

7. **Effect of Duodenal Regurgitation on Gastric Function.**—The following conclusions are drawn by the authors: A tryptic enzyme is almost constantly present in the fasting and digesting contents of the normal human stomach. The tryptic enzyme is deduced to be trypsin regurgitated from the duodenum. Trypsin in the gastric contents is highly resistant to the action of acid and pepsin. In general, the tryptic value is high in the presence of low acidity and in alkaline reaction, and of low value when the gastric contents are of high acid concentration. A fall in the acidity is usually accompanied by a rise in the tryptic values. The color of the gastric contents often changes during the period of experiment from that of the ingested material to a golden yellow or a dark olive or blue green. This color change is due to regurgitation of bile from the duodenum and is absent on a diet of substances which do not cause the outpouring of bile. The tryptic values in the gastric con-

tents usually rise concomitantly with the color change, although in a nonbile stimulating diet the tryptic value seems independent of the color Sodium bicarbonate in 5 per cent solution is held in the stomach until sufficient hydrochloric acid is secreted to bring the alkalinity to a point in which it is nonirritating to the duodenum The retention is accompanied by a high trypsin value, suggesting antiperistalsis in the duodenum in response to an irritant Sodium bicarbonate in 1 per cent solution hastens the emptying of the stomach either by increasing the motility of the stomach or opening the pylorus Sodium bicarbonate solutions do not inhibit human gastric secretion but seem to have a direct stimulatory effect in some cases Free hydrochloric acid seems unnecessary for the opening of the pylorus, for the stomach sometimes empties while its contents are still alkaline Ingestion of 0.5 per cent hydrochloric acid is followed by a rapid fall in acidity to about 0.2 per cent, due to a regurgitation of alkaline duodenal contents as is indicated by the rise in tryptic values coincident with the fall of the acidity The acid is then emptied from the stomach Regurgitation of duodenal contents into the stomach is but another of the protective functions of which the body furnishes so many examples and has for its purpose the defense of the small intestines from irritants

8 **Liver Circulation in Relation to Glycemia.**—The results of the experiments performed by McGuigan and Ross were as follows Ligation of the portal vein caused a considerable hyperglycemia Ligation of the hepatic artery causes no hyperglycemia Simultaneous ligation of the portal vein and hepatic artery causes no hyperglycemia Hypervenosity of the liver causes no hyperglycemia Hyperarteriolization of the liver causes a significant hyperglycemia The utmost conceivable uncomplicated change in the circulation of the liver can play but a minor role in the production of glucosuria or diabetes

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

February III No 8 pp 421-470

9 *Anopheles Punctipennis Host of Tertian Malaria W V King, Washington D C
10 Pellagra in Jamaica J F Siler U S Army
11 Case of Juxta Articular Nodules G W McCoy and H T Hollmann Hawaii

9 **Anopheles Punctipennis in Tertian Malaria.**—As a result of two comparative experiments, *Anopheles punctipennis* has proved itself to be an efficient host for the parasite of tertian malaria *Plasmodium vivax* In one experiment, of six specimens mosquitoes fed on a human case of this form of malaria, five became definitely infected, the sixth remaining negative In this one specimen the evidence pointed to the conclusion that only a very small amount of infective blood had been ingested In one infected specimen, examined after an interval of twenty days, many ruptured oocysts were found on the stomach and an extremely heavy invasion of the salivary glands with sporozoites Three specimens examined in a lot of six *A quadrimaculatus* fed on the same patient showed infection of the stomach and in one an invasion of the salivary glands In a second experiment, one *A punctipennis,* fed on a patient infected with tertian gametes, and dissected after a lapse of twenty days, showed a light infection of the stomach and glands Two control specimens of *A quadrimaculatus* were found to be infected, one containing oocysts and one, after an interval of eighteen days, containing sporozoites

Archives of Pediatrics, New York

January XXXIII No 1 pp 1 80

12 *Chemistry of Products Used in Infant Feeding F W Howe, Boston
13 Digestibility of Proteins of Milk and Their Role in Infant Nutrition. L E Holt New York
14 Rôle of Fat in Infant Feeding J L. Morse Boston
15 Role of Salts in Infant Feeding F H Bartlett New York
16 Rôle of Carbohydrates in Infant Feeding H R. Mixsell New York
17 Malt Soup A G Mitchell Philadelphia
18 Cases of Hereditary Spinal Ataxia I J Farnell Providence R I

12 **Chemistry of Products Used in Infant Feeding**—Speaking of proprietary foods, Howe says In the nutrition of the infant, we cannot get away from the fundamental facts that fats, carbohydrates, proteins and salts are the essential constituents, and any proprietary food laying claim to being a complete food for an infant must contain all of these in forms which can be readily assimilated and in properly balanced proportions We all know how difficult it is to keep fats in a sweet and wholesome condition for any length of time, and, while it is not so difficult to keep the proteins, still it is no easy matter This narrows the field very considerably when it comes to making a proprietary food, and, as a natural result, we find most of them are made of blended carbohydrates in a large measure, milk sugar or maltose dextrins and the various starches, all of which can be used at less cost under their respective names and used as desired without the handicap of a blended product which is made to meet conditions in general and no one condition in particular

Arkansas Medical Society Journal, Little Rock

February VII No 9 pp 213 240

19 Arteriosclerosis O M Bourland Van Buren
20 Alcoholic Neurosis S W Colquitt McKamie.
21 Congenital Pyloric Obstruction T W White St Louis
22 Preventive Medicine A E Turrentine Blytheville

Bulletin of Johns Hopkins Hospital, Baltimore

March XXVII No 301 pp 63 92

23 *Acidosis J Howland and W M Marriott, Baltimore
24 Use of Suction in Postoperative Treatment of Bladder Cases I W Churchman New Haven Conn
25 *Relation of Angiogenesis to Ossification E Moschcowitz, New York
26 Pressure of Bile Secretion During Chronic Obstruction of Common Bile Duct W T Mitchell, Jr, and R E Stifel Baltimore

23 **Acidosis**—Acidosis, Howland and Marriott say, is not an uncommon condition in infancy and childhood, while it is especially frequent in the severe diarrheas of infancy, it may appear with a variety of diseases, and sometimes, apparently alone To recognize it with older children is not very difficult The character of the respiration is usually sufficient to arrest attention and one or two relatively simple laboratory tests will quickly determine the question one way or the other With infants who are irritable, restless and crying it is much more difficult to say whether hyperpnea is present, and yet with them it is most important to make the diagnosis early for the reason that acidosis is such a fatal complication of diarrheal disease in infancy Older children react promptly and often permanently to alkali therapy It may be possible to stop the clinical and laboratory evidence of acidosis in infants, but the patients usually die Why they do cannot be determined at the present time, the authors say Many normal processes have undoubtedly been inhibited, perhaps permanently, and many abnormal ones stimulated A restoration to normal conditions seems nearly impossible For this reason, do not wait until acidosis can be demonstrated From the beginning give bicarbonate of soda to infants with severe diarrhea in sufficient quantity to render the urine alkaline and keep it so

Howland and Marriott would lay down a general maxim that as hyperpnea indicates acidosis, so hyperpnea indicates alkali therapy, and this for infants or older children The alkalies may be given by mouth, by rectum, subcutaneously or intravenously Vomiting and diarrhea frequently render their administration by mouth or by rectum out of the question Then one of the other methods must be employed Intravenous administration is the method of choice, especially when rapidity of action is desired, and with acidosis rapidity of action is always desired The superior longitudinal sinus is available with infants, or the external jugular or femoral veins With older children, a vein in the arm can often be employed If facilities for the intravenous injection of alkali are not at hand, the injection may be made subcutaneously, with care that the bicarbonate has not been transformed into the carbonate, else severe sloughing of the tissues may result A 4 per cent solution is usually employed for intravenous use and a 2 per cent. solution for subcutaneous use The quantity to be injected depends on the size of the child, the severity of the symptoms and the effect produced, but the amount is always large It must be given until the urine becomes alkaline, even in infants under 1 year, as much as 10 gm in twenty-four hours may be required With the cases of acetone body acidosis, with no sugar in the urine, and with a low sugar content of the blood, glucose by the rectum, subcutaneously or intravenously seems clearly indicated in addition to the alkali With all forms water is urgently required, especially with infants who are desiccated as a result of the vomiting and diarrhea

25 **Relation of Angiogenesis to Ossification**—Three cases of calcification and two of ossification of the ovary are described by Moschcowitz The process in each instance involved a corpus albicans The specimens represented an apparently continuous series, in which four stages are recognizable (1) an early discrete multiple deposit within a healed corpus luteum, (2) a definitely circumscribed deposit of amorphous lime within a corpus albicans, (3) the formation of primary haversian canals, which is accomplished by the genesis of an active mesoblastic tissue, both on the surface and within the interior of such a circumscribed lime deposit This mesoblastic tissue is derived from the adjacent blood vessels of the ovary, and the predominant activity is the development of new blood vessels Associated with this activity is the development of osteoblasts from the mesenchymal cells, (4) true bone formation with maturation of all the elements described above together with eccentric deposition of bone plates around the primary haversian canals and the formation of marrow Moschcowitz is of the opinion that the development of new blood vessels affords the keynote to the interpretation, in terms of cellular ontogeny, of the process of ossification The histologic constituents which enter into the formation of new blood vessels are the progenitors of all the histologic components of osseous tissue In other words, blood vessels, osteoblasts bone cells and marrow (in large part at least) are merely differentiations of the mesenchymal cell unit Moschcowitz' specimens furnish strong corroboration of the "adaptive" or 'mesenchymal" theory of angiogenesis, and to the theory of the nonspecificity of endothelium He says that ossification does not occur without preliminary calcification, and calcification occurs only in dead tissue, therefore, there is no valid reason for regarding bony structures within the ovary as blastomas

California State Journal of Medicine, San Francisco

February, XIV, No 2 pp 43 84

27 Traumatism of Brain A Weeks, San Francisco
28 Anoci Association, Plea for Surgical Patient A B Cooke, Los Angeles
29 Leukopenia Its Relation to Orchitis, Case Report J H Catton, San Francisco
30 Clinical Records E S Kilgore, San Francisco
31 Is Rabies Under Control in California? J C Geiger, Berkeley
32 Prognosis of Prostatitis M Silverberg, San Francisco
33 Criminal Abortions and Medical Profession C D Ball, Santa Ana
34 Results of Thirty Five Transfusions S T Pope, San Francisco
35 Physician and Adaption Law in State of California S A Queen, San Francisco

Canadian Medical Association Journal, Toronto

February, VI, No 2, pp 97 192

36 Twilight Sleep J W Duncan, C Holbrooke and G W Phelan, Montreal
37 *Eclampsia D J Evans, Montreal
38 Psychoneuroses B E McKenzie, Toronto
39 Cystic Hygroma in Infant M H V Cameron, Toronto

37 **Eclampsia**—In a series of thirty-eight cases of toxemia of pregnancy, in which Evans studied the blood pressure findings, he placed the danger limit of pressure at 160 mm As his experience increases he says he is surprised at the number of cases in which the general symptom complex indicates a very considerable degree of toxemia, while the blood pressure readings are comparatively low A serious grade of pregnancy toxemia may exist while the blood pressure remains approximately normal As regards treatment, every individual case must be studied, and no single method of treatment is applicable to all In the presence of evident symptoms of toxemia in the later months of pregnancy, associated with albuminuria and casts, and an increased blood pressure, eliminative and sedative treatment is indicated One must rely on milk, diet, hot baths, the copious use of fluids and purgatives associated with rest in bed, to bring about improvement If there be no improvement, indicated by the subsidence of the albuminuria, reduction of blood pressure and disappearance of the general symptoms of toxemia, then labor should be induced Venesection, sweating, the employment of morphin and chloral in moderate doses, with purgation and the free use of fluids, constitute the treatment of a case of actual convulsions In cases at or near term active surgical methods of delivery may be undertaken, but only to save the life of the child, as such operations unless attended with considerable hemorrhage seem to have but little influence in relieving the condition of the mother

Cleveland Medical Journal

January XV, No 1, pp 1 82

40 *Results Obtained with Salvarsan Intravenously and with Auto salvarsanized Serum Intraspinously in Treatment of Syphilis of Central Nervous System R Dexter, Cleveland
41 Analysis of Death Certificates Which Were Returned to Physicians for Correction by Division of Health, City of Cleveland, January 1 to June 30, 1915 G E Harmon, Cleveland
42 Conservatism and Radicalism in Surgery of Ear, Nose and Throat S H Large, Cleveland

40 **Treatment of Syphilis of Central Nervous System**—Dexter is convinced that there are cases in which an arrest of the process may be accomplished by the use of mercury alone On the other hand, he says, there are a very definite number of cases of syphilis of the central nervous system in which the action of mercury is positively detrimental In these cases, salvarsan frequently acts extremely well and is an invaluable addition to the physician's armamentarium There are many instances in which the process may be arrested by the intravenous injection of salvarsan alone. These are usually meningovascular involvements, and the best results are to be expected in the early cases, especially those which have begun to have symptoms, but in which the physical signs of the disease are either absent or slight Whether the abolition of all the serologic signs of the disease can be expected under the intravenous administration of salvarsan is, so far as his experience goes, still open to doubt When mercury given intramuscularly or the intravenous injections of salvarsan have failed to arrest the process satisfactorily, the intraspinal administration of autosalvarsanized serum will have a markedly beneficial effect in a large proportion of cases The form of affection most amenable to treatment is that with meningovascular involvement The greater the central degeneration the less can be expected from treatment, for there is no drug which can reestablish nerve tissue once it has been destroyed As it is often difficult to differentiate clinically between these types of the infection, active and intensive treatment should be tried in most cases. It is probable, however, that very little can be done in most cases of general paresis Dexter regards the Swift-Ellis method for the intraspinal administration of autosalvarsanized serum, when carefully administered and rigidly adhered to, as a safe and eminently proper procedure for the combating of syphilis of the central nervous system

Georgia Medical Association Journal, Augusta

February, V, No 10, pp 227 251

43 Autogenous Bone Grafts in Nonunion and Malposition of Fractures of Long Bones W S Goldsmith, Atlanta
44 Treatment of Choice in Fractures of Skull C E Dowman, Atlanta
45 Suggestions for Arousing and Maintaining Interest in County Medical Societies W C Lyle, Augusta
46 Necessity of State Prosecutor to Enforce State Medical Laws J W Palmer, Ailey
47 Injection of Alcohol into Superior Laryngeal Nerve Trunk in Painful Laryngeal Tuberculosis E C Thrash, Atlanta
48 Crusade for Health in Ware County A Flemming, Waycross
49 Relation Local Society Should Bear to State Association B H Minchew, Waycross
50 Plea for All Time Health Officer in Every County T F Abercrombie, Brunswick

Illinois Medical Journal, Chicago

February XXIX No 2 pp 81 160

51 *Etiology and Prophylaxis of Cancer H T Byford Chicago
52 Modern Diagnosis and Treatment of Cancer of Stomach C. Beck Chicago
53 Important Elements in Leprosy Question in United States F L McEwen Chicago
54 Chronic Running Ear R H Brown Chicago
55 Some Advantages of Indian Intracapsular Cataract Operation E E Edmondson, Mt Vernon
56 Swimming Pool Conjunctivitis H S Gradle Chicago
57 Arthritis Deformans G F Butler Kramer Ind
58 Charcot's Joint J Y Welborn Evansville Ind
59 Roentgen Examination of Appendix M J Hubeny, Chicago
60 Tetanus Report of Cases J Ness Carmi
61 Early Consideration of Paresis C W Morrow Anna
62 Panama as Seen by Physician J J Firebaugh Robinson
63 Laboratory Significance J R Fehr Chicago
64 Practice Among Eskimo B H Brown Iroquois
65 Symptoms T A Jones Eldorado
66 Fracture of Elbow Joint J B McCarty, Chicago
67 Our Hospital G W Ross Watseka
68 Pellagra Report of Case R L Kane, Raleigh

51 Abstracted in The Journal, January 22, p 303

Indiana State Medical Association Journal, Fort Wayne

February IX No 2 pp 45 92

69 *Use and Misuse of Tinted Lens in Refraction I M Ruby Union City
70 Vertigo L D Brose Evansville
71 Diseases of Stomach and Duodenum C E Caylor Pennville
72 Intraspinal Treatment of Neurosyphilis B M Edlavitch, Fort Wayne

69 Abstracted in The Journal, Oct 16 1915 p 1396

Kansas Medical Society Journal, Topeka

February XVI No 2 pp 33-64

73 Chronic Infection of Tonsils Relation to Systemic Disease W R Dillingham Halstead
74 Tonsillectomy in Acute Tonsillitis. T L. Higginbotham, Hutchinson
75 Theory of Function of Adenoids and Tonsils. T A Jones Liberal

Maine Medical Association Journal, Portland

February VI No 7 pp 253 292

76 Nervous Diseases and Their Relation to Eye E W Taylor Boston

Missouri State Medical Association Journal, St. Louis

February XIII No 2 pp 51 100

77 Transplantation of Tibia in Spine for Kyphosis B Belove Kansas City
78 *Gastro-Enterostomy H E. Pearse Kansas City
79 Treatment of Irreducible Joint Fractures E F Robinson Kansas City
80 Deviations of Septum H Bailey Springfield
81 Some Aspects of Relation of Medicine to Law J T White Springfield
82 Preventive Medicine in Obstetrics F E Wilhelm Kansas City
83 Vesalius and Practice of Medicine F J Lutz St Louis
84 Factors in Success or Failure of Small Hospital R. E Castelaw Kansas City
85 Indications for and Advantages of High Incision in Cesarean Section F H Raab Kansas City
86 Industrial Training in Edinburgh for Crippled Boys and Girls D C McMurtrie New York.
87 Treatment of Gastro Enteric Disease of Infants H A Killion Portageville.
88 Large Urethral Calculus Rupture of Urethra Extensive Extravasation of Urine V Berry Okmulgee Okla

78 Abstracted in The Journal, June 26, 1915, p 2161

New York Medical Journal

February 19 CIII No 8 pp 337 384

89 Shoes Physiologic and Therapeutic. D D Ashley New York
90 Pedology and Its Possibilities. E B McCready, Pittsburgh
91 Sir Kenelm Digby and His Powder of Sympathy W R. Riddell Toronto Canada
92 Apparatus for Administration of Gas Oxygen W Walter Chicago
93 Diathermia Physiologic Specific. A C Geyser, New York.
94 Clinical Significance of Gastric Analysis L. W Kohn Philadelphia.
95 Autolysin S P Beebe, New York.

February 26 No 9 pp 385-432

96 Syphilis and Internal Medicine L. F Barker Baltimore
97 Unsuspected Syphilis in Neurology J Collins New York
98 Medical Service in Organized Militia W S Terriberry, New York
99 Quinin and Urea Bichlorid in Toxemia of Pulmonary Tuberculosis M S Cohen, Philadelphia
100 Coroner and Physician W S Wadsworth Philadelphia
101 Syphilis of Stomach F D Holland, Hot Springs Ark
102 Gynecology K H Goldstone New York
103 *Treatment of Typhoid with Bacterins. L Waitzfelder, New York

103 **Typhoid Treated with Bacterins**—Fourteen patients were treated by Waitzfelder with bacterins and two ordinary, average cases with the average amount of toxemia and temperature were used as controls, that is, they received no bacterins and were treated symptomatically All the patients were placed on high calory diet, the amount in children varying from 500 to 2,000 calories a day, and in adults from 700 to 3,000 calories a day In every case the typhoid bacillus was recovered from the blood, feces, or urine The injections were given intramuscularly The doses varied from 66 to 800 millions, the larger dose apparently acting best The period of convalescence was materially shortened, all the patients were in condition to resume their usual vocation within one month after leaving bed, the average invalidism therefore being less than nine weeks From this limited experience Waitzfelder is inclined to think the administration of bacterins in typhoid is of service, in that it lessens the toxic symptoms

New York State Journal of Medicine

February XVI No 2 pp 51 104

104 Sectionalism F M Crandall, New York
105 Treatment of Disturbances of Digestion in Infancy J L Morse, Boston
106 Spinal Manifestations of Syphilis M A Starr New York.
107 Radical Operation for Cervical Cancer Report of Forty Cases J A Sampson Albany
108 New Conception of Diabetes and Its Treatment J L. Heffron Syracuse
109 Pyorrhea Alveolaris and Some Modern Discoveries Regarding Its Causes and Treatment F E Stewart, Philadelphia
110 Repair of Complete Laceration of Female Perineum C G Child Jr New York
111 *Soy Bean in Infant Feeding J F Sinclair, Philadelphia.

111 **Soy Bean in Infant Feeding**—Sinclair's experience with soy bean leads him unhesitatingly to urge its usefulness in the treatment of summer diarrhea, in various intestinal disturbances and in marasmus It is well borne, readily digested, and by reason of its fat and proteid content furnishes the necessary pabulum to nourish the sick infant. In a series of seventy-four cases there were nineteen deaths eleven cases were unimproved, while forty-four babies did well as evidenced by the improvement in their general condition, character of their stools or gain in weight Some improved in all these particulars, others improved in their general condition and in the character of the stools, but did not gain in weight while they were in the hospital All of these babies were under 3 years of age and were ill with summer diarrhea Thirty-four were diagnosed gastroenteritis, twenty-eight enteritis, and twelve ileocolitis In thirty-eight cases, the condition of the patient on admission is noted in the records as varying from "bad" to "dying", while in thirty-six cases it is recorded as from "fair" to "good"

Northwest Medicine, Seattle, Wash

February XV No 2 pp 37 72

112 Cancer of Stomach C E Sears Portland Ore
113 Malignant Tumors of Gallbladder J E Else Portland Ore.
114 Excision of Ulcer Bearing Area in Gastric Surgery C N Suttner Walla Walla
115 Prevention and Cure of Cancer K. A J Mackenzie, Portland Ore
116 Present Status of Treatment of Cancer S W Mowers Tacoma
117 Clinical Study of Gastric and Duodenal Ulcer G F Koehler and R C Walker Portland Ore.

Philippine Journal of Science, Manila

November 1915 X No 6 pp 357 394

118 Treatment of Retrogressive Skin Lesions of Leprosy with Basic Fuchsin O E Denney Culion Philippine Islands
119 Leprosy J A. Johnston Manila
120 Tropical Obstetric Problems F Calderon Manila.
121 Study of Pathology of Gallbladder and Biliary Passages in Cholera J S Coulter U S Army

South Carolina Medical Association Journal, Greenville

February, XII, No 2, pp 29 61

122 Therapeutic Value of Mineral Water F L Parker, Charleston
123 Interpretation of Certain Laboratory Findings F A Coward, Columbia
124 Experiences with Emetin in Dysenteric Conditions H L Shaw, Fountain Inn
125 *Cardiospasm with Dilated Esophagus*, Report of Case J W Parker, Greenville
126 Present Influenza Epidemic in New York P M Allen and P L Hudson, New York

Tennessee State Medical Association Journal, Nashville

February, VIII, No 10, pp 425 466

127 *Some Pertinent Points in Vascular Surgery*, Report of Cases E T Newell, Chattanooga
128 Skin Grafting J L Crook, Jackson
129 How Shall We Treat Appendicitis? M C McGannon, Nashville
130 Normal Labor J Roberts, Kingston
131 What Is the Matter with Hannah? W K Vance, Bristol

Wisconsin Medical Journal, Milwaukee

February XIV, No 9, pp 371 406

132 Advances in Otologic Diagnosis S J Kopetzky, New York
133 Influence of Manometric Pressure on Middle Ear H B Hitz, Milwaukee
134 Diagnosis of Incipient Mental Disease F M Aplin, Waukesha
135 Two Cases of Adenoma of Thyroid J J Bellin, Green Bay
136 Roentgen Ray Diagnosis in Diseases of Accessory Sinuses E A Smith Milwaukee
137 Diagnostic Theses in Pulmonary Tuberculosis L Brown, Saranac Lake, N Y

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

February 5, I No 2875 pp 189 224

1 *Antenatal Clinics and Prematernity Practice at Edinburgh Royal Maternity Hospital, 1909 to 1915 J W Ballantyne
2 *Immediate Treatment of Severe Postpartum Hemorrhage R K Howat
3 Cesarean Section in Pitman's Cottage R G Bell
4 Influence of Syphilis on *Chances of Progeny* N B *Harman*
5 Splint for Compound Fracture of Ankle M Sinclair
6 Bronchopneumonia with Secondary Hemorrhagic Meningitis and Recovery A G Sherra
7 Traumatic Rupture of Spleen, Splenectomy, Recovery W H Cam
8 *Case of* Traumatic Rupture of Spleen E H Jones
9 Case of Probable Spontaneous Rupture of Spleen W B Ogilvie

1 **Prematernity Practice at Edinburgh**—The prematernity system of the hospital as it now exists is described by Ballantyne as follows The prematernity ward is the center of the whole work, for without it all the rest would be ineffective The other parts of the system are largely of the nature *of sources of supply* for the prematernity ward They consist in the first place of the prematernity or prenatal nurses who come into touch with expectant mothers in the outdoor department of the hospital, and who, if necessary, recommend these "expectants" either to the antenatal clinic or to the prematernity ward In the second place, there is the prematernity home for unmarried girls, in which such young pregnant women are kept under medical supervision, and can be sent either into the general wards when they pass into labor, or into the prematernity ward if they develop serious complications of gestation, in the third place, of the antenatal clinic, and, in the fourth place of the medical practitioners in the neighborhood, who, with steadily increasing frequency, are sending suitable patients of the working class into the hospital for prematernity treatment The prematernity *department* of the hospital, naturally, is connected with the maternity portion, where the women are delivered of their infants and pass the days of the puerperium, and that again is reinforced by the baby clinics, to which the mothers are enjoined to bring *their infants* for supervision, weighing and advice, and by the postnatal home for the unmarried mother and her first child At the same time these agencies are not necessarily all brought into action in any case It is not essential, for instance, that a woman treated in the prematernity ward wait in the hospital for her confinement, she may be relieved of her trouble while in the pregnancy ward, and thereafter return to her own home for her confinement, and this is not an infrequent occurrence in the case of maladies early in pregnancy, such as threatened abortions and troublesome vomiting

2 **Treatment of Severe Postpartum Hemorrhage**—Howat emphasizes the great importance of high elevation of the pelvis as a primary measure *in the treatment of this condition*, because it promptly, simply and effectively deals with the immediate cause of great danger, and continues to act in the promotion of the patient's subsequent recovery Elevation of the pelvis *not only automatically* lessens or arrests bleeding, it also by gravity drives the unshed venous blood back to the heart and facilitates the flow of blood to the brain, in both of these ways stimulating circulation and respiration at precisely the time when this is most urgently *needed* The elevated position recommended greatly facilitates the rapid introduction and retention of hot saline solution The degree of elevation advocated *may* suggest a risk *of air embolism* from "adspiration" into the uterus and thence to the uterine veins on withdrawal of the *vaginal hand* Whatever this risk might be, it is counteracted by two precautions, namely, (1) uterine contraction, the hand is not to be withdrawn from the vagina until this natural preventive is in active operation, while it is so *in operation* air *may* enter the vagina, but cannot enter the uterus, (2) closing the vaginal orifice with a wet pad on the vulva as the hand is withdrawn

Edinburgh Medical Journal

February, XVI No 2 pp 89 168

10 Congenital Kyphosis D M Greig
11 Use of Hypochlorous Acid (Eusol) in Gunshot Wounds A Miles
12 *Lung Lesions in Aortic Aneurysm B Bramwell
13 Notification of Births (Extension) Act W Robertson
14 Case of Lacerated Wound of Thigh Treated by Eusol A Miles

12 **Lung Lesions in Aortic Aneurysm**—The *following* cases are cited by Bramwell (1) large aneurysm of the descending thoracic aorta, the cavity of which was almost completely filled with a very dense old clot, complete consolidation of the left lung due to the pressure of the aneurysm *on the root of the left lung and left bronchus*, physical signs suggestive of pleuritic effusion and malignant disease of the lung, the sac of the aneurysm aspirated on *three separate* occasions, *20, 20* and 10 ounces of pure blood being withdrawn, (2) *chronic pneumonia* due to the pressure of a small aneurysm on the root of the left lung and left bronchus, (3) large aneurysm of the descending thoracic aorta, pressure on the root of the left lung and left bronchus, consolidation of the left lung, (4) *aneurysm of the thoracic aorta*, pressure on the root of the right lung and obstruction of the right bronchus, retraction and consolidation of the right lung, retained secretion in the bronchi, no tubercle, (5) *aortic aneurysm, pressure on the root of the* left lung and left bronchus, consolidation of the left lung (chronic pneumonia), no phthisis, (6) aneurysm at the termination of the transverse portion of the aortic arch and descending thoracic aorta, consolidation of the left lung (*chronic pneumonia* and bronchiectasis), pressure on the root of the left lung, obstruction of the left bronchus, (7) aortic aneurysm, consolidation of the right lung (chronic pneumonia), pressure on the root of the *right lung and right* bronchus, (8) aortic aneurysm, *pressure* on the root of the right lung and right bronchus, consolidation of the right lung, (9) large aortic aneurysm pressing on the root of the left lung, (10) aortic aneurysm pressure on the right *bronchus*, *consolidation* of the lung, chronic pneumonia, (11) fusiform dilatation of the ascending thoracic aorta and transverse portion of the aortic arch, large sacculated aneurysm at the junction of the transverse with the descending *thoracic* aorta, compression *of the root* of the left lung and left bronchus, erosion of the ribs and vertebrae, acute phthisis, with numerous tubercle bacilli in the sputum and extensive cavities in the left lung, (12) aortic aneurysm, *extreme collapse* with slight interstitial overgrowth of the left lung, advanced chronic interstitial nephritis, (13) aortic aneurysm, phthisis, sputum contains tubercle bacilli

Indian Medical Gazette, Calcutta

January LI No 1 pp 1 40

15 Two Madras Medical Lists D G Crawford
16 *Reduction of Mortality of Cholera to 11 Per Cent by Addition of Atropin Hypodermically to Hypertonic and Permanganate Treatment L Rogers
17 Conjunctival Flaps in Cataract Operations H Smith
18 Typical Case of Hysteria Its Treatment and Cure A W Overbeck Wright
19 Hysteria (?) in Young African A B DeCastro
20 Treatment of Kala Azar and Cases Treated with Metallic Antimony Antimonyl Sodium Tartrate Formaldehyd and Other Drugs R U N Brahmachari
21 Case of Anthrax Treated Successfully by Phenol C B McConaghy
22 Case of Aneurysm of Descending Thoracic Aorta Extending into Right Pleural Cavity and Right Side of Abdomen T S Tirumurti

16 **Treatment of Cholera.**—Rogers summarizes his present treatment thus On admission give 1/100 grain of atropin sulphate hypodermically and repeat it morning and evening Take the specific gravity of the blood the blood pressure and temperature in mouth and rectum If the blood pressure is not over 70 mm or the specific gravity is 1 063 or over, give an intravenous injection of sterile hypertonic saline of three four, five or even six pints, in accordance with whether the specific gravity is 1 063 1 064, 1 065 or 1 066 and over in male adults, and correspondingly less in females and children in proportion to their approximate weights Unless the rectal temperature is below 99 F the saline should never be injected at above blood heat (98 F) for fear of producing hyperpyrexia If the rectal temperature is 100 F or over the fluid should be given at a temperature between 80 and 90 F The hypertonic solution should contain 120 grains (8 gm) of sodium chlorid and 4 grains (0 4 gm) of calcium chlorid Permanganate of potash is to be given in 2 grain pills made up with kaolin and petrolatum and preferably, coated with salol or keratin, two pills every quarter of an hour for two to four hours, in accordance with the severity of the case and then two every half-hour until the stools change to green or yellow and become comparatively small Barley water and plain water by the mouth in small quantities at a time (3 or 4 ounces) should be given frequently, but no other food during the attack Normal saline (sodium chlorid 90 grains to a pint) half a pint every two hours by the rectum should be given until the collapse stage is passed and urine is being excreted regularly, and then reduced in frequency to every four hours and continued until two pints of urine are passed in twenty-four hours

The fall of the blood pressure to 70 and under, or the rise of the specific gravity to 1 063 or above are indications for a repetition of the intravenous injection At each repetition of the injection, and at the first injection in all patients admitted late with suppression of urine for twenty-four hours or more, give one pint of the following alkaline solution sodium chlorid 60 grains and sodium bicarbonate 160 grains (2 per cent), and continue with the ordinary hypertonic solution up to the total amount indicated by the specific gravity of the blood The alkaline solution counteracts the tendency to acidosis, which is the most essential cause of postcholeraic uremia If the urinary excretion is deficient in the later stages with a blood pressure of 100 mm or more and a specific gravity below 1 063 but not much below the normal point of from 1 056 (in Indians) to 1 058 (in Europeans), give one pint of the above alkaline solution either subcutaneously or better intravenously, to increase the urinary flow The alkaline solution in such cases should also be given by the rectum, instead of normal saline If the blood pressure remains persistently much below 100 mm and urine is deficient, give pituitary extract hypodermically and caffein sodium salicylate in 5 grain doses by the mouth every four hours, and dry cup and foment over the kidneys repeatedly In very young children and feeble old patients glucose may be given in the rectal saline to support the strength

Lancet, London

February 5 I No 4823 pp 281 330

23 Clinical Thermometry (To be continued) G S Woodhead and P C Varrier Jones
24 Use of Gynocardates Orally and Subcutaneously in Leprosy L Rogers
25 Two Cases of Fourth Disease with Relapses O J W Adamson
26 Case of Abscess of Myocardium Resulting in Aortic Leakage into Right Heart R D Rudolf and V H K Moorhouse
27 Examination of Soldier s Heart O Leyton
28 New Combined Physical Treatment for Wounded and Disabled Soldiers R F Fox and J C McClure

Sei-I-Kwai Medical Journal, Tokyo

January XXXV No 1 pp 1 4

29 Two Cases of Rat Bite Treated by Salvarsan K Nakasone

Bulletin de l'Académie de Médecine, Paris

January 25 LXXV No 4 pp 91 106

30 Pyoculture (Renseignements et indications fournis par la pyo culture) P Delbet
31 Partial Tetanus Restricted to Left Leg (Tetanos partiel precoce, localise au membre inferieur gauche) Courtois Suffit and R Giroux

Lyon Médical, Lyons

December 1915 CXXIV No 12 pp 377 408

32 Gunshot and Shell Wounds of the Chest, the Hemo Pleuro Pneumonic Syndrome Fifty Three Cases M Piery To be continued

Paris Médical

January 29 VI No 5 pp 113 128

33 Hypertrichosis After Traumatism of Limbs With or Without Nervous Lesions Forty Four Cases Lebar
34 *Wounds from Small Flying Scraps of Shells (Les plaies de guerre par petits projectiles) H Roulland
35 Double Pulley Exerciser for Mechanotherapy After Wounds in War (La mobilisation methodique par les appareils de fortune) P Kouindjy

33 **Hypertrichosis After Traumatism**—Lebar relates that among the 281 wounded he has had in his charge at an improvised hospital for wounds of nerves, 44 of the men had an abnormal growth of hair on the limb affected Several illustrations are given of this hypertrichosis, and the explanation is advanced that the prolonged immobilization had compromised the vital specific functioning of the muscle, whether this immobilization had been from the dressings applied, or the men had refrained from using the limb for fear of its hurting, or there was paralytic impotence The absence of the normal play of the muscles involved upset the regulating balance and entailed the trophic disturbance The hypertrichosis was on the wrist and back of the hand in 16 cases in which the radial nerve had been injured, in 5 cases the sciatic nerve had been injured in 5 the ulnar nerve and once the brachial plexus The hypertrichosis never seemed to correspond to the course of the nerve or its peripheral distribution nor to any root innervation In 8 cases the wound had not apparently injured any nerve, in 2 cases the hypertrichosis developed early in neuropathic paralysis These latter cases suggest that these and other trophic troubles are due to injury of the fibers of the sympathetic nerve which accompany the vessels, the injury being from lack of the normal trophic reflex impulses owing to the immobility of the muscles involved Traumatic hypertrichosis is thus another phenomenon to call attention to the dangers of too absolute immobilization (See editorial The Journal, Jan 22, 1916, p 281)

34 **Wounds from Small Projectiles**—Roulland refers to flying scraps of shells or of bullets, slivers of wood or pebbles driven by the force of an explosion The wounds thus made are characterized by the apparent insignificance of the injury, the depth to which the projectile penetrates, and the rapidity and gravity of the inevitable infectious phenomena Treatment requires removal of the foreign body and provision for ample draining He has found hot water of great assistance in treatment of wounds in war, either as local baths or moist dressings or as a spray It seems to have a wholesome trophic action on bruised and mortified tissues, especially when supplemented with hydrogen dioxid

Presse Médicale, Paris

January 27 XXIV No 5 pp 33 40

36 *Treatment of Malaria (Le traitement du paludisme) H Vincent.
37 Pyoculture Not Reliable. S Pozzi and Agasse Lafont
38 *Graphic Method for Recording Extent of Atony and Paralysi L Lortat Jacob and A Sézary

January 31, No 6, pp 41 48

39 Indications for Operation Deduced from Histologic Examination of Wounded Nerves P Marie and C Foix
40 *Ethyl Chlorid Anesthesia in Treatment of the Wounded (L'anesthesie prolongée au chlorure d'ethyle dans la pratique des grands pansements) Savariaud

February 3, No 7, pp 49 56

41 Principles for Construction of Artificial Limbs and Preparation of the Stump (Les appuis des appareils prothetiques et les procedes d'amputation) A Broca
42 Technic for Puncture of a Vein (La ponction veineuse Le moyen de ne pas faire de "ponction blanche") H Godlewski

36 **Malaria**—Vincent remarks that the present campaign in the Balkans, Greece and Turkey is exposing the soldiers to danger of malaria, and he reviews the present status of knowledge as to the exact technic for warding it off and treating it In the Mediterranean countries, malaria is apt to assume a continuous type, and for this he advocates one or two subcutaneous injections of quinin daily until defervescence A saline purgative is given also and, when the fever has subsided, quinin is continued by the mouth for several days, on the alert to detect any relapse, as this type is peculiarly rebellious Vincent recalls that he has established the efficacy or 3 or 4 gm a day of calcium chlorid in warding off and treating hemoglobinuric bilious fever

38 **Graphic Record of Atonic and Paralytic Conditions**—A long narrow strip of sheet lead is fitted over the ankylosed or paralyzed limb, molded to its contour The strip is then laid on paper and its inner curving outline traced on the paper By repeating this at intervals the improvement under treatment can be traced with precision Three of these goniograms, as Jacob and Sezary call them, are reproduced

40 **Ethyl Chlorid Anesthesia for Changing Dressings**—Savariaud comments on the difference between the dressings of peace and those required for extensive, ragged shell wounds When the dressings on these large shell wounds are changed, an anesthetic cannot be dispensed with, and he has found ethyl chlorid best adapted to the purpose for reasons which he enumerates He protects the patient's eyes with a pad of four or five thicknesses of gauze, and then lays a square of oiled silk over the head, large enough to cover the face and tuck the four corners under the head A small hole is made in it only large enough to admit the tip of the ethyl chlorid tube By spraying it gently, progressive and continuous anesthesia is realized, and it can be kept up at the rate of 1 c c for each minute of the anesthesia

Berliner klinische Wochenschrift

Nov 22, 1915, LII, No 47, pp 1201 1224

43 Sarcomatosis of Lymphatic Gland System in Man of 58 (Primäres, generalisiertes Spindelzellsarkom der Lymphdrusen) P v Baumgarten
44 Deforming Arthritis as an Affection of the Cartilage (Die deformierende Gelenkentzündung im Lichte neuer Forschung) G Axhausen
45 Bullet from the Rear Lodged in Heart Wall, No Appreciable Disturbance R Mühsam
46 Action on Tissues of Intensive and Deep Radiotherapy (Zur Strahlentiefenwirkung) F Heimann
47 Later Course of Wounds of the Skull (Zur Klinik der Schadelschüsse nach den Erfahrungen im Heimatlazarett) E Hayward Commenced in No 46
48 Perforation in Extremely Mild Typhoid Without Agglutination (Bemerkenswerter Fall von Unterleibstyphus) L Mahn
49 Excision of Venereal Ulcer With Laryngologists' Flat Actual Cautery F Fuchs

January 10, LIII, No 2, pp 29 52

50 *Itching With Inflammatory Exudation (Entzündliche Exsudation und Jucken) P G Unna
51 Treatment of Infected Wounds of Bones and Joints (Zur Behandlung der inficierten Knochen und Gelenkschüsse) W Körte
52 *Injections of Fibrin to Stimulate the Periosteum to Production of Callus (Behandlung der verzögerten Callusbildung und der Pseudarthrosen mit Fibrininjektionen) S Bergel
53 Ultrafiltration of Drugs (Ultrafiltrate, eine neue Arzneiform) F Blumenthal
54 *Intensive and Rapid Treatment of Syphilis (Die Syphilisbehandlung zur Kriegszeit, und was soll nach Friedensschluss geschehen, die Zivilbevölkerung vor der Infektion durch venerisch krank Heimkehrende zu schützen) M von Zeissl
55 Classic Cesarean Section on a Dwarf (Klassischer Kaiserschnitt bei einer Zwergin) W Nagel
56 *Indications for Venesection (Einige Indikationen der Aderlassbehandlung) A Theilhaber

50 **Itching with Inflammatory Exudation**—Unna here discusses prurigenous skin affections of the type of prickly heat, prurigo and vesicular eczema There are three factors involved, the solid horny layer, the exudation in the prickle cell layer and the hyperemia in the papillary body (See summary of his previous communications January 15, p 227) The hyperemia is best combated, he says, with dry cold, rubber bottles with cold water are better than moist cold Cold from evaporation can also be utilized, first applying a paste as indicated for the eczema, and over this a dressing kept constantly wet with water or a solution of aluminum acetate With this combination of a drying paste and evaporation, the eczema vesicles dry up while the coolness from the evaporation combats the hyperemia and the horny layer softens under the influence of the moisture The dressings also protect the region against injury from scratching

52 **Fibrin Injections to Promote Development of Callus**—In cases of delayed healing of fractures and for pseudarthrosis Bergel makes local injections of fibrin obtained from blood drawn from horses He gives a number of roentgenograms which apparently demonstrate that by this means the production of callus is stimulated and pseudarthrosis corrected

54 **Abortive Treatment of Syphilis**—Von Zeissl states that among his last series of 3,000 syphilitic patients he has 26 who were given treatment when only the primary sore was evident and there have been no further manifestations to date and the Wassermann has been persistently negative He urges that when the army disbands, after the war, each soldier should be given the Wassermann test and have a culture made from the urethral secretions Only when these are or become negative should he be discharged to return home This is the only way to protect the wives against possible sterility from gonorrhea and the offspring against the taint of syphilis

56 **Indications for Venesection**—Theilhaber relates that he has applied venesection 450 times in the last eight years He has found it extremely useful for the hot flashes of the menopause It never did harm, but was not invariably effectual It helped in some cases of dysmenorrhea, but others did better with resection of the sphincter of the internal os Venesection relieved sometimes in cases of intermenstrual colic, in two women who had never borne children roentgenotherapy benefited more, and in two others resection of the sphincter of the internal os The benefit from venesection generally persisted for from three to six months, then he sometimes had to repeat it He drew usually from 300 to 500 c c of blood The women were able to leave the office in half an hour afterward, without feeling weak Venesection has also done him good service in treating neuralgia and neuroses, especially nervous headache in the plethoric Another indication for venesection is as an adjuvant to diathermia in prophylaxis of recurrence after operations for cancer He noticed once that recurrence was rare in patients who lost much blood during the removal of their cancer Since then he gives periodical venesections for the purpose of stimulating the blood-producing organs, usually twice a year, withdrawing 400 or 500 c c of blood Fichera's recent experiments on animals confirm that periodical venesections enhance the resisting power against inoculation of cancer Theilhaber is convinced that cancer develops by preference in anemic tissues The slight transient anemia from the venesection is soon followed by a wave of greater production of blood

Correspondenz Blatt fur Schweizer Aerzte, Basel

January 8 XLVI No 2, pp 33 64

57 Indications and Technic for Radium and Mesothorium Exposures E Sommer
58 Activation During Pregnancy of Tuberculosis Otherwise Latent E Meyer

January 15, No 3 pp 65 96

59 *Continuous Extension With Muscles Relaxed in Semiflexion as Aim in Treatment of Fractured Limbs (Zur Behandlung der Knochenbruche der Extremitaten) A Wettstein

59 **Treatment of Fractures**—Wettstein expatiates on the advantages of continuous extension with the muscles relaxed

in semiflexion and urges that it is immaterial how this is realized The general practitioner can improvise ways and means as most convenient to apply this principle

Deutsche medizinische Wochenschrift, Berlin

January 20 XLII No 3 pp 61 92

60 The Vomiting of Pregnancy a Toxicosis Plus a Nervous Predisposition (Behandlung des sog unstillbaren Erbrechens in der Schwangerschaft) P Jung
61 Noninfectious Internal Diseases in War and Peace (Nicht infektiose innere Krankheiten im Krieg und Frieden) M Mosse
62 Internal Medicine and the War (Ergebnisse der bisherigen Kriegserfahrungen auf dem Gebiete der inneren Medizin) P Reckzeh Concluded in No 4
63 War Hysteria (Kriegshysterie) S Meyer
64 *Duodenal Ulcer (Kritische Bemerkungen zur Diagnose und Therapie des Ulcus duodeni) I Boas Commenced in No 2
65 Does Modern Bread Making Conform to Biochemical Laws? (Entspricht die jetzige Broterzeugung den modernen biochemischen Forschungen der menschlichen Ernahrung?) J Stoklasa
66 *Intradermal Tuberculin Reaction in Diagnosis of Tuberculosis in Guinea Pigs (Der Wert der Intrakutan Tuberkulinreaktion bei Meerschweinchentuberkulose) H Selter
67 Technical Suggestions for Injections and Infusions W Alter
68 Bulging of Supraclavicular Fossa With Plethora (Die plethorische Vorwolbung der Supraklavikulargrube) C Trunecek (Prague)

60 **Uncontrollable Vomiting of Pregnancy**—Jung emphasizes the importance of discriminating between the ordinary and harmless vomiting in pregnancy and the serious type The loss in weight is the criterion, but this must be determined with precision, weighing the woman every third day under like conditions and on a good scale The best time for this is following defecation after breakfast, the clothing always the same The amounts eaten must be recorded in writing for each meal and the vomit must be saved to show the physician To prevent ordinary vomiting from developing into the severe type he orders the breakfast to be taken in bed with an hour s repose afterward Food should be taken often and never much at a time preferring fluid food at first but resuming the ordinary food as soon as possible omitting all dishes which the woman does not like in health, impressing on the patient that if the directions are closely followed there will be no vomiting The stomach is not responsible in any way for the vomiting and hence does not require special treatment In the severe type we must stop all intake of food and fluid This is difficult and sometimes impossible in the home if the woman is really losing weight, she should be placed where the starvation treatment can be given a thorough trial before resorting to the evacuation of the uterus The transference to the hospital in itself has a pronounced effect on the nervous predisposition In the hospital the woman is kept constantly in bed and fed at first with fluid, small amounts at a time, and very cold Alcohol may be given but is by no means necessary In the severer cases Jung allows only ice cold milk, by the teaspoonful, every half hour or hour, relieving the thirst with ice pills (made in a test tube with a refrigerating mixture) If the vomiting persists nothing should be allowed by the mouth for a day, and four nutrient enemas should be given instead These are disagreeable to the patient and sometimes the vomiting stops abruptly when she is told that mouth feeding will be resumed when she stops vomiting

If the woman is restless and cannot sleep, small subcutaneous doses of morphin 0 005 gm three times a day, may render good service, opium by the mouth is seldom retained in these cases He lays stress on the importance of suggestion, saying that all the measures should be applied impressively to influence the patient subjectively Lavage of the stomach may prove useful on this account, also subcutaneous saline infusion This has the further advantage of combating the water-starvation of the tissues The signs of actual danger are the continual rapid decline in weight, declining blood pressure with increasing pulse rate, appearance of acetone in the urine and of febrile temperatures If these signs persist, in spite of proper dietetic measures, abortion will have to be induced He *warns* that this should not be postponed until the patient is unable to stand the necessary maneuvers The written consent of the patient and family should be obtained, and it is safer to call in some experienced confrere Jung prefers to empty the uterus at one sitting, under ether, using Hegar tents or slitting the anterior wall of the uterus to clear it out, then suturing it once In conclusion he reiterates that success depends mainly on the "professional imponderables," and that the stomach and uterus should be left alone as long as possible, also that it is necessary to exclude beforehand gastric ulcer, nephritis and disease of the central nervous system as the cause of the uncontrollable vomiting He warns incidentally that the patient or the family often have a special interest in getting the pregnancy interrupted, and the physician must be on the alert to guard against this tendency

61 **Noninfectious Internal Diseases in War and Peace**—Mosse states that in the army hospital in his charge at Berlin during 1915 four men of the 1 427 between 18 and 30 had diabetes In one man with a tuberculous process in the lung, the diabetes had developed abruptly In a corresponding series of men between 18 and 30 during the two years before the war only one had diabetes Nephritis was encountered in 4 3 per cent of 2,300 men sent to the hospital from the eastern seat of war, and it was of a hemorrhagic type in most This same hemorrhagic type is predominant also at present in the Vienna hospitals, among both soldiers and civilians Mosse found a cancer in the stomach in three men of 31 33 and 34, and the growth proved inoperable in two at the biopsy In a fourth case the man of 36 succumbed to metastasis from a hypernephroma A number of the soldiers returning from the eastern front developed mild febrile temperatures at times for which no cause could be incriminated unless possibly the food after the deprivations of active service Alimentary fever is known in children, and this may be of the same type One of the cases reported warns that kaolin may inflict mechanical injury if there is unsuspected typhoid Severe intestinal hemorrhage followed the third and fourth day after 200 gm had been taken on two successive days to relieve diarrhea and abdominal pain Typhoid bacilli were found then in the stools

64 **Duodenal Ulcer**—Boas insists that the outcome of gastro enterostomy for duodenal ulcer is not always the success generally credited to it Reexamination months later will often reveal the presence of occult blood This is an objective sign that normal conditions have not been restored Only when the gastro-enterostomy banishes the occult hemorrhages so that tests for it months and years later are persistently negative can we speak of an actual permanent cure It would strengthen the standpoint of those surgeons who regard gastro-enterostomy as a sure cure for duodenal ulcer if such testimony could be adduced, but Boas' experience is against it His view is that the gastro-enterostomy merely provides conditions which facilitate the success of a course of treatment for the ulcer Operative treatment for recurring or intractable duodenal ulcer may be necessary, but to advocate it for every case is going too far, he thinks, unless we can present evidence that occult hemorrhage is permanently arrested by it

66 **The Intradermal Tuberculin Reaction in Guinea-Pigs**—Selter has been conducting extensive research under a subsidy from the Koch fund and reports that a positive reaction at first may veer to negative in the course of a few months, indicating that the experimental tuberculosis has undergone a spontaneous cure On the other hand a positive reaction is a sign of the presence of tuberculosis but a negative reaction by no means excludes actual tuberculous infection

68 **Bulging of Supraclavicular Fossa as Sign of Plethora**—Trunecek emphasizes the importance of this sign of overfilling of the cardiovascular apparatus It reveals the existing plethora when the person seems to be entirely normal The plethora, however, is an element of danger, especially in case of intercurrent febrile disease, etc The fossae may bulge with constitutional disease, nephritis, arteriosclerosis, etc., and it is always a sign that the vascular system is overfilled and hence that there *is imminent* danger of cerebral hemorrhage This is exceptionally dangerous when it occurs with plethora, as more blood pours out of the ruptured vessel than under other conditions With what he calls spastic hypertension, that is, a high blood pressure from contraction of small arteries with muscular walls, the fossae do not bulge,

even when the capillary pressure may be as high as 200 He describes a case of "serum plethora" in which the bulging of these fossae was the only symptom which gave the clue to the trouble He gives an illustration of the bulging fossae, and reiterates the importance of this sign of plethora particularly in pneumonia, as it shows that immediate venesection will release the excess of blood with which the heart is contending, and thus may tide the patient past the danger point

Medizinische Klinik, Berlin

January 16, XII No 3, pp 59 84

69 The Mechanical Overexcitability of the Striated Muscles as Symptom of Exhaustion in Soldiers (Ueber das Muskelphanomen der Soldaten im Felde, das ist die mechanische Uebererregbarkeit der quergestreiften Muskulatur als Symptom der Erschöpfung) E Mayerhofer
70 How Wounds Are Being Treated (Ueber Wundbehandlung bei Kriegsverletzten) Treiber
71 *Paratyphoid Affections (Paratyphöse Erkrankungen) L v Korczynski Commenced in No 2
72 Experimental Vaccination Against and Inoculation With Typhoid (Typhus Schutzimpfung und Infektion im Tierversuch) E Emmerich and G Wagner

January 23, No 4, pp 85 112

73 Appendicitis and Pregnancy (Appendicitis und Schwangerschaft) J Veit
74 *The Different Causes of Falling Out of the Hair (Die verschiedenen Ursachen der Alopecie) R O Stein Commenced in No 3
75 War Neuroses (Grundsatzliches zur Kriegsneurosenfrage) F Mohr
76 Comparison of Various Methods of Determining the Outline of the Heart (Ueber die Methoden der Herzgrössenbestimmung) A Weber
77 *Well Contaminated With Colon Bacilli as Cause of Pneumonia (Durch Bacterium coli commune verseuchte Trinkwasserbrunnen als Ursache von Broncho Pneumonien) F Windrath
78 The Body Covering of the Penguin, Seal and Walrus (Die Körperbedeckung der Pinguine, See Elefanten und Walrosse) A Sokolowsky

71 **Paratyphoid**—Korczynski describes the clinical picture of paratyphoid gastro-enteritis as observed in a recent series of thirty-two cases and discusses treatment It must be along the same lines as for typhoid and acute gastro-intestinal catarrh The diarrhea usually responds to kaolin or charcoal Prophylaxis requires sanitary supervision of provisions and notification of all cases, even single ones, tracing them to their source The public should be shown at every opportunity the connection between food and paratyphoid infections During the same period he encountered forty-one cases of paratyphoid pyelitis with or without involvement of the bladder, all in women The pyelitis develops with chills, high fever, and pain usually radiating forward and downward Nausea and vomiting are characteristic features of the syndrome, and herpes is common The spleen was never enlarged in these paratyphoid pyelitis cases, but a leukocytosis between 8,000 and 14,000 was constant No local or internal measures seemed to display much efficacy The rest and warmth of keeping constantly in bed, supplemented by copious drinking, gave most relief, and the fever never lasted for more than a week or two

74 **The Various Causes of Falling Out of the Hair**—Stein classifies these causes as they affect the hair itself or the hair-producing apparatus The first group includes the infections, and the second the alopecia of neurogenous, toxic or cicatricial origin, and that from atrophy There can be no doubt that purely nervous causes may induce the hair to drop out, or that reflex vasomotor disturbance from a fright may injure the papilla enough to kill the hair Stein cites examples of each Alopecia of toxic origin is general, the patches in syphilis are probably due to nests of spirochetes Thallium given to arrest night sweats in tuberculosis is followed by a general dropping out of the hair for from one to three months Then it grows in again The fallen hairs are normal, showing that the alopecia is the result of toxic injury of the trophic center

Baldness, he relates, is connected with the secretion of the sebaceous glands The secretion of sebum is most profuse in the scalp, face and over the shoulder blades Brow and nose are normally covered with a coating of oily sebum, possibly because these regions have no subcutaneous layer of fat and hence this extra secretion protects against excessive radiation of heat The sebaceous glands may thus have an action antagonistic to that of the sweat glands When the skin is chilled and "goose flesh" forms, this squeezes out the sebum and a protecting oily coat thus covers the region and prevents radiation of heat—"Muscular exertion produces sweat, mental exertion produces sebum" The development and functional activity of the sebaceous glands are intimately connected with those of the genital glands Regular functioning of the latter causes increased secretion of sebum, this clears out the stagnating sebum and may thus cure a tendency to acne A sudden profuse secretion of sebum may push out hairs only loosely held, and thus induce a transient falling of the hair Stein explains further that the hair and the sebaceous gland form a unit like the leaf and flower on one stalk If the leaf develops out of proportion, the flower suffers, and excessive functioning of the sebaceous gland is at the expense of the hair The gland gets all the nourishment and the hair wastes away from lack of nourishment The papilla produces weaker, poorer hairs and finally stops producing them altogether This occurs at the points where the secretion of sebum is most pronounced and the blood supply most precarious As the connection between the activity of the genital glands and the secretion of sebum seems to be an established fact, it suggests the explanation for the restriction of baldness to the male There is a physiologic limit to the functioning of the genital glands in women but not in men The assumed hormone from the genital glands which *apparently stimulates the sebaceous glands* to keep up their work, is continuously produced in men while in women there is no further opportunity after the menopause for this hormone to be produced, and hence the sebaceous glands in the scalp lack this constant stimulus to functioning A woman's scalp is also shielded by the long hair, so there is less sebum needed to protect it against chilling To sustain this theory of the mechanism of baldness, he cites among other data the observation that men of the eunuchoid type do not grow bald

77 **The Colon Bacillus in Pneumonia**—Windrath relates that within a period of ten to fourteen days eight of thirteen persons obtaining water from a certain well developed acute bronchopneumonia Colon bacilli were found numerous in the drinking water Extremely virulent colon bacilli and also scanty pneumococci were found in the sputum There had been no rain for five weeks, and the region was much infested with rats The pneumonia in each case had been preceded by a few days of gastro-intestinal trouble

Mitteilungen a d Grenzgeb der Med und Chir., Jena

XXIX No 1 pp 1 128 Last indexed Dec 25, 1915, p 2263

79 *Abnormally High or Abnormally Low Gastric Acidity Not Constant Enough for Exact Differentiation of Gastric Ulcer and Cancer (*Weitere Beitrage zur Magendiagnostik* Das Gluzinskische Verfahren, geprüft an 462 Fallen) H Zoeppritz
80 *Local and General Leukocytosis Reliable Sign of Internal Hemorrhage (Leukocytose nach inneren Blutungen) H Dold
81 *The Symptoms Ascribed to Duodenal Ulcer May Occur *With* Locations Higher Up or Lower Down (Diagnose von Ulcus duodeni) O Wulff, (Id) P J B P Van Amstel

79 **Differentiation of Gastric Ulcer and Cancer**—Zoeppritz has been applying in 462 cases of stomach trouble Gluzinski's *method* for determining whether the stomach shows oversecretion of gastric juice—which, he assumes, is the *rule* with gastric ulcer—or abnormally low secretion—which is the result of the mucous catarrh that seems constantly to accompany and precede cancer *The findings* were not encouraging Relative secretory insufficiency occurs frequently with cancer, but may be encountered *also with* all other kinds of stomach affections and even with merely abdominal trouble, and in the healthy stomach *When it* occurs with cancer it is not an early sign, and the cancer may be far advanced without this sign being present It was found positive in 20 6 per cent of the ninety-two cases of gastric ulcer or its consequences, and hence the discovery of *relative* secretory insufficiency by no means excludes simple ulcer In applying such tests it would be better to give two meals *that are* alike rather than the test breakfast and the test meal as by the Gluzinski method

80 **Leukocytosis with Internal Hemorrhage**—Dold has continued his research on the leukocyte attracting power of various biologic substances and here relates that blood injected into the knee of a rabbit or guinea pig has a powerful action in this respect Sterile defibrinated blood from the animal or from another of the same species displays considerable leukotactic power when injected into the cavity in the knee A general leukocytosis in the blood stream followed these injections made into a joint or into the peritoneum The leukocytosis in the blood stream was even more pronounced when a sterile internal hemorrhage was induced in the animal The discovery of leukocytosis may thus aid in the diagnosis of internal hemorrhage In the animals it reached its highest point at about the twenty-fourth hour and the blood count had become normal again by the fourth day thereafter In eleven guinea pigs the leukocyte count jumped from an average of about 4 700 to 8 312 the sixth hour and 11 250 the twenty-fourth, and then subsided to 8 843 the second day 5,671 the third and 4 843 the fourth day Dold calls attention to the fact that whole blood injected displayed no leukotactic power but that this became marked when defibrinated blood was used for the injections About 56,000 and 48 000 leukocytes were found in the knee joints of one rabbit 38 000 and 40,000 in another When 4 c c of the defibrinated blood were injected into the peritoneum of a rabbit the blood stream showed 12 000 or 14 200 leukocytes the sixteenth hour, a guinea-pig 18 000

81 **Differential Diagnosis of Duodenal Ulcer**—Wulff's communication from the Copenhagen university clinic in charge of Rovsing is practically the same as the article summarized in these columns March 20 1915 p 1040 The clinical history is compared with the operative findings in eighteen cases of pyloric ulcer, thirty-nine of duodenal and sixty-one of gastric ulcer A pyloric ulcer or one near the pylorus or above it was found in many cases presenting the typical Bucquoy-Moynihan set of symptoms Neither is the Hartmann-Souppault pyloric syndrome restricted to cases with the ulcer at the pylorus, it may be lower down or higher up

Van Amstel discusses recent literature on duodenal ulcer and describes a case of gallstones with no tendency to gastro-intestinal ulceration in which the man suffered from distressing hunger pains at night relieved at once by eating zwieback When symptoms attract attention to the ulcer it is then usually in a comparatively advanced stage The symptoms ascribed to a duodenal ulcer may be those merely of acid dyspepsia He cites various data which emphasize that the anamnesis is rarely sufficient basis for a positive diagnosis of duodenal ulcer and normal Roentgen findings do not exclude the possibility The ulcer is more liable to be in the duodenum than in the stomach with negative Roentgen findings He agrees with Rovsing that the diagnosis of ulcer has been made erroneously in many cases and gastro-enterostomy made on a pure guess Van Amstel lauds the method of introducing an electric light directly into the stomach through a minute incision when the abdomen has been opened By this means the stomach can be inspected throughout and also the duodenum In conclusion Van Amstel cites a number of cases of duodenal ulcer in young children In a boy and girl of 15 and 14 the operation followed twenty-six and seventeen hours after perforation of the ulcer, both recovered It is possible that in some cases in which stenosis of the pylorus was assumed the trouble may really have been duodenal ulcer In Collin s compilation of 270 cases of duodenal ulcer 42 were in children under 10 Gastric ulcer is rare in children One infant a month old succumbed to hemorrhage from a duodenal ulcer, but syphilis was incriminated in this case

Münchener medizinische Wochenschrift, Munich

January 18 LXIII No 3 pp 73 112

82 Provocative Gonococcus Vaccine Test (Der diagnostische Wert der Gonokokkenvakzine) P Asch and Adler
83 A Vibrio Found in Stool Suspicious of Dysentery (Der Nachweis eines Vibrio in ruhrverdachtigem Stuhl) F Kutscher and Peters
84 *Operative Treatment of Nephritis in Soldiers (Chirurgische Behandlung der Nierenentzundung) S Wilk
85 Official Directions for Prophylaxis of Diphtheria (Die amtsarztliche Bekampfung ubertragbarer Krankheiten I) M Henkel
86 Comparative Research on the Cell Count in the Cerebrospinal Fluid (Vergleichende Untersuchungen uber die Thoma-Zeiss sche und Fuchs Rosenthal sche Zahlkammer bei Liquoruntersuchungen) C Stern
87 *Determination of Interval Since Death by Response of Muscles to Percussion (Die Bestimmung der Todeszeit durch die muskelmechanischen Erscheinungen) S Zsako
88 Welfare Work for Maimed Soldiers (Praktische Kriegsinvalidenfursorge) H Scholl Commenced in No 2
89 Paratyphoid A in the Field F Lehmann
90 Malignant Measles (Bosartigkeit der Masern bei Bosniaken) K Helly
91 Characteristic Necropsy Findings in Tetanus (Obduktionsbild bei Tetanus) K Helly
92 Acute Exophthalmic Goiter of Nervous Origin (Einige Falle von Hyperthyreoidismus, darunter drei von akutem Basedow bei Kriegsteilnehmern zur Stutze der neurogenen Enstehung dieser Krankheit) A Rothacker
93 Traumatic Circumscribed Ossifying Myositis Hauber
94 Hypnosis in Treatment of Enuresis in Soldiers on Active Service W Sauer
95 Apparatus to Mobilize Stiff Joints and Exercise Muscles (Fingerpendelapparat) F v Karajan, R B Schwarz (Zur mediko mechanischen Behandlung der Fingerversteifungen) G Hohmann (Universal Hand und Finger Mobilisierungsapparat) E Schepelmann (Uebungsapparate mit abstufbarem Widerstand zur Kraftigung der Handschliessmuskeln) K Ramm
96 Improved Technic for Localization of Foreign Bodies Deep in the Tissues Kunz.

84 **Surgical Treatment of Nephritis**—Four soldiers between 24 and 32 presented symptoms of extremely severe nephritis which they attributed to getting chilled No benefit was apparent from systematic internal treatment and the grave condition and dropsy kept up for months The edema from head to foot was so extreme that the men s position in bed had to be frequently changed or the parts of the body spread out flat like a board Decapsulation of one kidney caused a prompt change for the better The edema subsided and in the course of a few weeks the men looked healthy and robust In selecting the kidney for the operation, notice was taken of the side the men preferred to lie on The kidney was found enlarged to two or three times its normal size The cortex was blue from congestion, and it bled copiously when the capsule was separated It was rinsed with boiled water until the bleeding stopped The patients stood the operation well The urine was blood stained for four days in three of the cases in the fourth for two weeks Under calcium chlorid then the urine became free of blood The urine totaled six liters in the twenty-four hours by the fifth day in all but one case and by the fourteenth day in this, and there was not a trace of edema by the end of the sixth week The man with 14 1,000 albumin lost 30 kg in weight, about 66 pounds and seems to be clinically cured The nephritis in these cases seemed to be a functional disturbance, the kidney being strangled but its tissues not irreparably altered

87 **Estimation of the Interval Since Death by Muscular Phenomena**—Tapping with the hammer on certain muscles elicits a reflex contraction up to from ninety to 120 minutes after death The contraction can be elicited in the same way on the living, but it is more pronounced in the cadaver as there is no antagonistic tonus Some of the muscles may respond for four hours after death Tapping along the radius from the elbow downward a point is reached where this induces (1) extension of the hand, tapping along the radius above the wrist causes (2) the thumb to bend Tapping on the spaces between the bones in the hand causes (3) the corresponding fingers to close up Extension of the toes is induced by tapping on the back of the foot (4), and adduction of the foot follows tapping on the leg (5) while extension occurs on tapping along the tibia at the middle third (6) A movement of the muscles up to the inguinal region occurs when the lower third of the thigh is tapped across (7) and the scapulae move toward each other when the back is tapped between the scapula and the spine Zsako called attention in 1912 to these muscle mechanical phenomena, and the experiences in the war have confirmed and amplified his previous statements The lack of any response testifies that death must have occurred from two to four hours before Some of the responses may be observed even through the clothing

92 **Neurogenous Exophthalmic Goiter**—Rothacker reports the case of a healthy girl of 21 who developed mild exoph-

thalmic goiter when her father refused his consent to her marriage She was married later and all the symptoms disappeared, but returned a year later when her father died Again they subsided but the whole syndrome returned recently at her husband's death In two other cases nervous excitement or overwork brought on the syndrome in a young man and a physician Under rest and quiet the disturbances subsided In three other cases described in detail the syndrome was brought on by the nervous excitement of trench warfare and subsided when the men were transferred elsewhere Rothacker has encountered a number of similar cases, and declares that the possibility of a nervous origin for exophthalmic goiter cannot be denied He urges those who have opportunity, to apply the ninhydrin test in cases of exophthalmic goiter

Therapie der Gegenwart, Berlin

January, LVII No 1, pp 1 40

97 Glandular Affections in Children (Zur Kenntnis der Lymphadenopathien des kindlichen Alters und ihre Behandlung) A Baginsky To be concluded in No 2
98 When to Operate in Acute Gallstone Colic (Wie erkennen und wann behandeln wir operativ den akuten Gallenkolikanfall?) H Kehr To be concluded in No 2
99 *Objective Determination and Treatment of Certain Kinds of Nervous Injury (Ueber ein neues Verfahren zur objektiven Feststellung bestimmter nervöser Störungen und ihre Beseitigung) E Weber
100 Eczema (Ueber Ekzembehandlung) C Bruhns

99 **Objective Sign of Nervous Injury**—Weber's previous communication on this subject was summarized in The Journal, June 5, 1915 p 1949 The extensive opportunities afforded by the war for further research on nervous upsets have sustained his theory and confirmed the benefit of treatment based thereon He applies tests which induce dilatation of the blood vessels, and then registers the extent of the dilatation He has established, he states that the dilatation is of central origin and hence occurs over the whole body Also that the response occurs always in the same manner in health while certain nervous affections modify it in a characteristic manner He records the findings with the plethysmograph, having adapted this to use for the face and abdominal organs as well as for the limbs The respiration rate is recorded at the same time With concussion of the brain there is constriction of the vessels, instead of the natural dilatation His method enables the benefit from treatment to be followed step by step by objective findings—a rare privilege Not drugs but physical measures are beneficial, and chief among these in its effect on the centers controlling the vessels is the alternating douche, switching abruptly from cold to hot and back again The benefit is felt particularly in the vessels of the brain after concussion, headache and vertigo improve at once and the benefit persists for hours When the headache returns, the objective findings veer to the pathologic at the same time On repeating the douches the benefit lasts longer and longer until a week without treatment elapses without symptoms, when the cure may be regarded as complete The alternating douches are given twice a day in treatment of concussion of the brain, each from five to eight minutes long, changing from hot to cold and back again every half minute When these douches are impracticable, nearly as good effects can be realized by applying ice bags alternately to various sensitive areas on the body, changing about every two minutes He found that after application of superheated air to the limb and also after general anesthesia, the vessel centers gave the pathologic response to the test over a surprisingly long period This pathologic response was also the rule in toxic and infectious conditions, but was never found in nonorganic affections, traumatic neuroses, hysteria, epilepsy or psychoses

Wiener klinische Wochenschrift, Vienna

January 13 XXIX, No 2, pp 33 60

101 *Serodiagnosis of Typhus (Zur serologischen Diagnose des Fleckfiebers) E Weil and A Felix
102 Differential Diagnosis Between Typhus and Typhoid (Zur Differentialdiagnose zwischen Typhus exanthematicus und abdominalis) P Habetin
103 *Theoretical Study of Action of Antitetanus Serum F Hamburger
104 Removal of Projectiles in Face or Ear Region (Die Klinik und operative Entfernung von Projektilen in Fallen von Steckschüssen der Ohrgegend und des Gesichtsschädels) G Alexander
105 First Measures for Fractured Femur (Versorgung der Oberschenkelfrakturen im Felde, zugleich eine Instruktion für den Feldarzt) H v Haberer

January 20, No 3, pp 61 88

106 Trauma as Cause of Glaucoma (Trauma als Urheber eines primären Glaukoms) W Goldzieher
107 Alien Serums Do Not Influence Cancers (Kritische Studien zur experimentellen Therapie maligner Neoplasmen II) S Frankel and E Fürer
108 *Vaccine Therapy, Mouse Typhoid Bacillus Vaccine in Treatment of Clinical Typhoid (Erfahrungen über Praxis und Theorie der Vakzinetherapie) L Zupnik, A v Muller and K. Leiner
109 War Wounds of the Urogenital Apparatus E. Haim
110 Leverage Splints (Hebelschienen) G Engelmann
111 War and Tuberculosis (Krieg und Tuberkulosebekampfung) A Götzl

101 **Serodiagnosis of Typhus**—Weil and Felix had thirty-three cases of typhus in Galicia in which the clinical picture and the fever curve were typical for typhus but the agglutination test and deviation of complement were typical for typhoid Necropsy failed to reveal typhoid lesions, but as cases of true typhoid have been published in which no typical lesions could be detected, the negative findings do not absolutely exclude typhoid

103 **Antitetanus Serum**—Hamburger calls attention to the way in which tetanus treated early with large doses improves and then keeps about on the same plane for from five to seven days Then comes an exacerbation and death soon follows unless large amounts of antitetanus serum are injected anew, which may save the patient This stationary plane and sudden exacerbation from the fifth to the seventh day in tetanus, and often likewise in diphtheria, correspond to what we know of the mode of elimination of the alien albumin to which the antitoxin is bound He refers to published research which demonstrated that the alien albumin persisted in the blood for four, five or six days and then disappeared suddenly from it, by a kind of crisis The stationary phase demonstrates that the antitoxin is able to hold the disease in check for this long It is important, therefore, to give more antitoxin and in sufficient amounts in time to forestall the exacerbation and ward it off He suggests that if the antitoxin were given along with a large amount of plain serum the antitoxin might be spared more to exert its specific action and be retained longer His (theoretical) treatment of tetanus would therefore be 200 units brought up to 300 c c with normal horse serum Five days later half of this amount should be injected anew and possibly repeated the sixth and seventh days No opportunity for applying this method in practice has developed as yet

108 **Treatment of Typhoid with Mouse Typhoid Vaccine**—Zupnik and his co-workers gave vaccine therapy an extensive trial in 145 cases of various infectious diseases, including 112 typhoid cases The curative results were meager by subcutaneous injection, but the results, they relate, were very encouraging when the vaccines were injected repeatedly in small amounts It was found that a vaccine made from mouse typhoid bacilli seemed to influence clinical typhoid as effectually as the specific vaccine, while it did not cause such severe by-effects as seem to be inseparable from the latter in intravenous injection The chill is brief and slight and the symptoms on the part of the heart, the dyspnea, cyanosis and acceleration of the pulse are materially milder, not causing grounds for alarm This method of treatment was applied without discrimination to all cases, even the very severe, except those with bad hearts to begin with The only death that occurred in connection with the vaccine therapy was that of a young man with typhoid in such a severe form that the vaccine was apparently the last resort, although the heart was known to be defective In this case a chill lasting half an hour followed the intravenous injection of 0 5 c c of the mouse typhoid vaccine, representing twelve million germs The pulse ran up and about three hours after the injection there was extremely intense delirium for an hour and a quarter and then five brief convulsions, with death the sixth hour after the injection, about the eighth day of typhoid In three other cases delirium developed after the injection, mild

in two but severe and persistent in the third These delirious patients had to be held down in bed by force The mouse typhoid vaccine induces production of antibodies, the therapeutic dose ranges from eight to twenty million germs A tentative preliminary injection of four millions will reveal any special susceptibility If this is borne well forty-eight hours later the therapeutic dose of eight millions is given The response of the fever to any vaccine is less pronounced in malaria and relapsing fever and in exceptionally severe typhoid The vaccine seems to influence favorably the whole disease process but the mechanism for this is still a mystery The vaccines that may be used in typhoid can be classed as those of the typhoid colon and dysentery bacilli type, and the mouse typhoid and meningococci type

Gazzetta degli Ospedali e delle Cliniche, Milan

January 2 XXXVII No 1 pp 1 16

112 Notes From a Field Hospital (Note di Chirurgia di guerra) G Campora

January 27 No 8 pp 113 128

113 *Frostbite (Brevi considerazioni pratiche sulle congelazioni ai piedi con speciale riguardo alle lesioni di primo e secondo grado) C Longo

114 Arguments For and Against Inclusion of Pharmaceuticals in the Pharmacopeia (Le specialita nella Farmacopeia Ufficiale?) E Villa

113 **Frostbite**—Longo emphasizes the value of a general tonic to improve the circulation as a whole after the feet have been frostbitten He has had surprising results he says with iodin 5 gm of potassium iodid and 0 5 gm metallic iodin with distilled water to make 20 c c gradually increasing the number of drops given Epistaxis frequently accompanies frostbite and it may be absolutely uncontrollable for a time The best treatment he has found for this is a 10 per cent solution of gelatin by the mouth

Policlinico, Rome

January 23 XXIII No 4 pp 101 132

115 Wounds of the Throat (Alcune considerazioni sulle lesioni e sui traumi della laringe e della trachea in guerra) C Ferreri

116 *The Functional Vasomotor Syndrome D Consorti

January 30 No 5 pp 133 164

117 Orthopedic Treatment of Fractured Jaw in War (Sulla cura ortopedica delle fratture della mandibola in guerra) A Beretta and C Cavina

118 Present Status of Antityphoid Vaccination T Silvestri

116 **The Functional Vasomotor Syndrome**—Consorti says that a constitutional predisposition, a vasomotor ataxia, is responsible for the fluctuations in the vasomotor system under the influence of toxins Consorti emphasizes that this is not an actual malady in itself, but there is always some nervous predisposition if not actual vasomotor ataxia It is traditional that the hysteric and neurasthenic are liable to severe upsets in the balance of the circulatory system The chief causes liable to bring such upsets are tobacco, alcohol and other intoxications and digestive derangement Nicotin acts on the blood vessels and is the principal if not the only cause of vasomotor angina pectoris as well as of the organic Chronic intoxication from nicotin generally induces constriction of the vessels but it may cause dilatation, either active or from paresis of the vessels With this predisposition plus some chronic intoxication any slight cause is liable to bring on hyperemia of the brain, with dizziness oppression in the head and a dazed condition An extra long walk or a too abundant meal may induce ischemia of the brain from abnormally low blood pressure, tachycardia and syncope If the syndrome is acquired from some preventable cause, removal of the latter may restore conditions to normal, but if the cause continues to act organic lesions may become installed in time There is no doubt that arteriosclerosis is favored by active vasodilatation and hypertension But at first, under repose and quiet the syndrome subsides without leaving a trace Many cases of noises in the ear, transient deafness, bronchial affections and asthma are maintained by active and paretic dilatation of the bronchial vessels There may be a *neurosis of the respiratory* organs—actual asthma It often happens that one region may show vasoconstriction and another vasodilation at the same time Headache is frequent, as also insomnia, there may be dyspepsia and bowel spasms, pain in the liver radiating to the shoulder, is not uncommon, or there may be pain suggesting gallstones Other cases may present symptoms suggesting sclerosis of the kidney but after removal of the toxic cause the urine returns to normal This change may occur suddenly and no cause for the transformation can be detected In short there is not an organ that may not be the seat of congestion from vasomotor disturbance, differentiation is aided by the instability of the phenomena In treatment the special organs involved should be left unmolested while everything should be done to tone up and strengthen the nervous system Regular work, tranquil surroundings nourishing easily digested food are the main reliance, abstaining from tobacco, alcohol and strong coffee Some persons cannot stand even small amounts of alcohol or tobacco without vascular erethism, either from an idiosyncrasy or a cumulative action Consorti says in conclusion that when the symptoms indicate paretic dilatation of the vessels small doses of strychnin may prove useful When the symptoms indicate vasoconstriction trinitrin may be required Mild hydrotherapy is a good adjuvant to the *general measures, using cold when paretic vasodilatation* predominates

Brazil-Medico, Rio de Janeiro

January 8 XXX No 2 pp 9 16

119 Beriberi L Freire

119 **Beriberi**—Freire relates that Brazil is not the hotbed of beriberi formerly assumed What has gone by that name in the Amazon region and elsewhere has lately been proved by C Chagas official investigation to be a hitherto undescribed form of quartan malaria, characterized by a rapid and pernicious course and pretibial edema In all his research he never encountered anything of the nature of malarial polyneuritis and nothing to suggest beriberi When there is polyneuritis with malaria plasmodia found in the blood the trouble is beriberi in a malaria subject Nothing to suggest polyneuritis is ever seen in the hundreds of patients with *hookworm at the Rio hospitals Freire adds* that no direct contagion of beriberi from man to man is known although new foci can be started elsewhere from an endemic focus Japan had no beriberi until it opened its gates to commerce with India and the islands In turn, the Japanese carried beriberi to Australia All other forms of polyneuritis are restricted to certain habits or trades, such as the abuse of alcohol, and lead poisoning

A beriberi focus once established becomes fixed, in hot and moist climates at least Freire is convinced that these facts can be explained only by an intermediate host for propagation of its germ A closed institution, such as a hospital or asylum which once becomes a focus of beriberi, causes such devastation that some persons regard it as an actual crime to establish a general hospital in localities where beriberi is prevalent In many instances the patients in such have had to be dispersed and the institution closed A hospital for beriberi patients should be of the farm colony type Another peculiar feature of beriberi is that it may attack only one section of a town In the large Singapore epidemic only men had it, not one woman was affected In one tenement building all those affected were on one story Infants nursing women with beriberi acquired it but threw it off as soon as they were nursed by healthy women

He regards the rice theory as having had its day, the people who live exclusively on rice generally are subject to privations of all kinds and lack of hygiene [A study of beriberi in Cuba was presented by Lebredo at the recent Pan-American Scientific Congress He said that the disease was prevalent in Cuba in the days of slavery, but the first careful study of it was made in 1911 when an epidemic of beriberi appeared in the prison in the Santa Clara province Animals fed with the rice that had been used developed usually a syndrome resembling beriberi The clinical and experimental data intimated that the rice contained some starch-attacking germ which generated a poison This assumption has been sustained by further research another epidemic occurring in the same prison in June, 1912, in April, 1913 and also in 1914 in the hospital of the United Fruit

Company, and in 1915 among the crew of an English ship from India In each instance, when the epidemic was virulent, the beriberi assuming the fulminating form, the animals developed also virulent beriberi symptoms when fed with rice from the supply that had been used The supposed starch-modifying germ isolated from the rice in the most virulent epidemics had spores that resisted boiling for twenty minutes Lebredo is inclined to think that this germ is found naturally in rice and does no harm so long as the starch is protected by the hull The pericarp alone is probably ample protection for the starch Lebredo is chief of the laboratory of the Public Health Service in Cuba His article opens the new year in the *Revista de Medicina de Habana*]

Semana Medica, Buenos Aires

Dec 9 1915, XXII, No 49, pp 687 714

120 Midwives and Midwifery Training School at Buenos Aires (La partera de Buenos Aires y la escuela de parteras) A Chueco
121 The Trained Nurse (Inauguracion de un curso sobre asistencia de enfermos y primeros auxilios) E Obejero

Russkiy Vrach, Petrograd

1915, XIV, No 50 pp 697 720

122 Metal Netting Splints G I Turner
123 Shield Like Syphilids (Syphilide en corymbe) V I Terebinsky
124 Treatment of Clavicle Fractures (Novii sposob lietcheniya perelomov klutchitzi) M A Konosevitch
125 *Action of Digitalis on Peripheral Blood Vessels J V Golovinsky
126 *Skin Tuberculin Test in Surgical Practice A Y Zitronblatt
127 *The Initial Stage of Leishmaniosis V L Yakimoff

No 48, pp 1129 1152

128 *Typhus Fever in the Russian Army I I Shirokogoroff

No 49 pp 1153 1176

129 The Iron Atoms in Animal Tissues, and Their Physiologic Value A I Danileffsky Commenced in No 48
130 *Cardiovascular Insufficiency in Soldiers D D Pletneff
131 *The Chemical Activity of the Stomach in Relation to the Symptoms of Duodenal Ulcer S G Mintz Commenced in No 47

125 **Action of Digitalis on Peripheral Blood Vessels**—Golovinsky studied the action of digitalis on the peripheral vessels of dogs, rabbits and frogs He used digipuratum in various concentrations (1 5,000 and 1 1,000) which he passed in Ringer's or Locke fluid through the isolated ears (Kravkoff's method) or through the splanchnic and the portal systems (Frohlich's method) He found that solutions of digipuratum in doses that may have a therapeutic effect do not affect the lumen of the peripheral vessels of the regions examined, skin, splanchnic or portal systems, while toxic doses caused dilatation The increased blood pressure from digitalis is thus due to the increased cardiac activity

126 **Skin Tuberculin Test in Surgical Tuberculosis**—Zitronblatt studied v Pirquet's test on 256 patients, 92 had visible tuberculosis, mostly of surgical character, 27 were merely suspects, and 137 were clinically free from tuberculous symptoms He used Koch's old tuberculin in 25, 10, 5 and 0 5 per cent solutions For control vaccination he sometimes used bouillon He found that the weaker the solution of tuberculin, the weaker was the reaction, the more indefinite were the results His conclusion therefore is that Pirquet's test has no practical value for the diagnosis of surgical tuberculosis

127 **The Initial Period in Leishmaniosis**—The initial stage of leishmaniosis in mice and dogs may be of but a few days' duration Its length depends on the quantity of the injected parasites, on the age of the infected animal, and possibly on whether the virus was obtained from man or dogs

128 **Typhus Fever in the Russian Army**—Shirokogoroff found the following measures efficient in the campaign against typhus fever in the Russian army (1) instruction of soldiers in regard to the role of insects (lice) in transmitting the infection, (2) every possible means to be used to keep the body clean, providing the soldiers with sufficient amounts of underwear, soap, etc , (3) watching carefully for the presence of epidemic disease among the population where soldiers are stationed, suspicious lodgings should be condemned, (4) in case of an epidemic in the rear of the army, a twelve or fifteen day quarantine is established, the clothing, lodgings and the soldiers are made free of insects, the temperature is carefully watched, for the purpose of isolating the newly diseased persons, (5) in case the disease breaks out at the front, the infected men are immediately removed to the rear for the purpose of thorough unlousing and medical care

130 **Cardiovascular Disturbances in Soldiers**—Pletneff found among Russian and Austrian soldiers numerous cases of cardiovascular insufficiency in the form of old valvular heart lesions, myocarditis and arteriosclerosis Arteriosclerosis and an insufficiently developed aorta and heart gave the largest percentage of cardiopaths Next in frequency, the cause of the cardiovascular insufficiency was found to be a lack of proper physical harmony between single organs In healthy persons the cardiovascular insufficiency easily arises from lack of sufficient muscular exercise, and proper physical training

131 **The Chemism of the Stomach with Duodenal Ulcer**—Mintz summarizes the conclusions from his clinical experiences and research as follows 1 Hyperacidity, namely, disturbance in the "leveling" property of the stomach, is a constant phenomenon with a typical duodenal ulcer By "leveling" property he means the remarkable faculty possessed by the normal stomach of keeping the absolute acidity at the same level (See summary of his previous work, Abstract 135 in The Journal, Sept 18, 1915, p 1067) 2 The tardy pain is explained by the facts that in beginning of digestion, the gastric chemical function is normal Several hours after the intake of food, when the larger portion of the gastric contents has left the stomach, the leveling properties of the latter are disturbed and the gastric acidity begins to rise, causing spasm of the pylorus and attacks of pain 3 The pain-soothing effect of intake of food with duodenal ulcer can be explained by the lessened acidity of the stomach, the hydrochloric acid becoming combined with the food 4 The pain-soothing action of alkalies is due to the neutralization of the excess of hydrochloric acid The similar action from hydrochloric acid depends on its stimulation of the leveling activity of the stomach, that is, of the mechanism for self-regulation of acid secretion 5 The six hour bismuth residue that is, the amount retained in the stomach for six hours, with duodenal ulcer, is due to the reflex pyloric spasm 6 The excessive peristalsis of the stomach and its increased motor activity in cases of duodenal ulcer, can be explained by the fact that the duodenal mucosa is flushed at the end of the gastric digestion by the overacid stomach contents With gastric ulcer, normal or subnormal acidity of the stomach contents has been the rule in his experience Hypersecretion was most pronounced with ulcer near the pylorus He gives the clinical details of twenty-four operative cases of duodenal ulcer

Hygiea, Stockholm

LXXVIII, No 1, pp 1 96

132 Psychanalysis (Kritiska reflexioner över de psykoanalytiska teorierna) O Kinberg
133 Ulcerating Skin Disease of Gangrenous Type, Suggesting Gangrenous Ecthyma (Ett fall av tumorbildande ulcererande hudsjukdom av obekant art, i vissa avseenden liknande mycosis fungoides) S Strom
134 Impressions of America (Nagot om kirurgi, lakare och sjukhusvasende i Amerika) A Troell

Ugeskrift for Læger, Copenhagen

January 27 LXXVIII No 4 pp 85 122

135 *Case of Acute Heart Block in Young Clerk L Laursen

135 ***Acute Heart Block***—The young man was healthy and had never had scarlet fever, diphtheria or acute articular rheumatism and was not guilty of excesses of any kind He complained of headache for two weeks, then had a sore throat and pains in the feet but no fever As he was about to mount his bicycle he grew suddenly dizzy and fell, and the dizziness returned the next day or so, with oppression in the heart region Examination revealed total heart block Laursen thinks that some otherwise latent rheumatism infection was responsible for this complete dissociation of conduction between auricle and ventricle The subsidence of the heart block under treatment as for acute rheumatism confirmed this assumption of an indolent rheumatic infection localizing in the heart

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THE RECOGNITION OF GENERAL PARESIS WHILE IT IS STILL SUSCEPTIBLE TO TREATMENT

WITH REMARKS ON THE COURSE AND CLINICAL FEATURES OF THE DISEASE

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General paresis is a disease of the cerebrum and the central nervous system caused by the presence and growth of the *Spirochaeta pallida* in its lymph system The destructive action of these organisms is expended largely on the parenchyma or ganglion cells of the cortex of the brain Any part of the nervous system may, however, be subject to its ravages, but the symptoms of the disease are always finally and conspicuously cerebral

It is a fatal disease Once it is fully developed it is subject neither to amelioration nor to interruption Early and vigorous treatment of syphilis before the organisms have made their onslaught on the parenchyma of the central nervous system has wrought a change in the clinical display of the disease The hope is justifiable, with our enhanced capacity to deal with syphilis, based on a profounder knowledge of the principles or laws which govern the life history of the spirochetes and their susceptibility to destruction by arsenic, that finally we may be able, first, to prevent general paresis, and failing in this, to cure it Its prevention is synonymous with the prevention and adequate treatment of syphilis, this phase of the subject I have already discussed[1]

There is no encouragement from experience recent or remote to justify the hope that we shall be able to cure general paresis until such time when we shall recognize the disease much earlier than we do now We must thwart the preparations that the spirochetes make in the nervous system soon after infection, and we must annihilate them in their early skirmishes

I have studied the histories of 100 general paretics that have come under observation during the past six years, since the founding of the Neurological Institute, where the facilities for their proper observation and interpretation exist, to learn if there was anything in the clinical histories of these patients that would permit the physician who saw them early, either to suspect the disease or to diagnosticate it with sufficient positiveness to subject them to treatment, and to enable one to say how these early cases comport themselves

That general paresis is a syphilitic disease of the brain is now universally admitted The textbooks still mention important contributory causes and discuss other de facto causes than syphilis, but the textbook of the future must say that general paresis is always a syphilitic disease Less than half the patients admit syphilis or give indications direct or collateral that it has occurred, but study of the cerebrospinal fluid and blood serum of these patients gives information that satisfies me that the disease has its origin in syphilis in every instance (It should be said that the latest recorded expressions of some syphilographers is inimical to this statement[2])

Some writers still teach that sexual and alcoholic excess are important contributory factors to the causation of general paresis . There is a widespread belief, especially among English psychiatrists and among the laity, that sexual aberrations and particularly fellatio may cause the disease There is not the slightest support for this supposition in my experience, nor do my histories, now amounting to upward of 400, bear out the statement that excessive use of alcohol is even a contributory cause deserving of mention Many patients in the early stages of general paresis give way to excessive indulgence in alcohol as an evidence of their mental disorder, but this has nothing to do with the causation of the disease I am not contending that an exciting cause of the disease is not operative in many instances, or that in addition to the de facto cause there is no exciting cause It has been convincingly shown that among the natives of Algeria, from 60 to 70 per cent of whom are syphilitic, paresis is practically unknown,[3] and this despite the fact that there is ample proof that syphilis has existed in Algeria as long as it has existed at all, namely, since 1495 Writers on this subject, as a rule, content themselves with the statement that this elusive contributory or exciting cause is synonymous with the stress of higher civilization and advancing culture and efficiency Others maintain that hereditary factors in the existence of paretics have not been given adequate weight in estimating the etiology of the disease If those who contend for the first are willing to say that general paresis is contributed to by every infringement on the laws of nature, there can be no possible objection to subscribing to it But to say that it is incidental to civilization and culture, even though civilization and culture entail divorce of the simple life, is absurd

That the hereditary factors are very prominent in paretics, as contended lately by Julius and Arndt, is not corroborated by my own studies The occurrence of the disease in more than one member of the family may be interpreted as an evidence of inadequate resistance, as lowered vital resistance, it may also be accidental, or dependent on a single source of infection for instance, among my cases are two brothers who were in college simultaneously, and who developed the disease, one at 39 and the other at 43, although not susceptible of proof, it is probable that there was a common source of infection in the two cases On the other hand, the father of these two patients committed suicide, and it was thought he was insane

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[1] Collins Joseph Syphilis of the Brain Its Occurrence Symptoms and Prevention The Journal A. M A July 10 1915, p 139

[2] Nonne, M Syphilis und Nervensystem, Berlin 1912

[3] Rudin Allg Ztschr f Psychiat 1910, No 5

Unquestionably an unstable, nervous organization may be inherited, and an unstable, nervous organization is more easily put out of commission than a stable one, but there is nothing to show that hereditary influences make the brain more susceptible to the inroads of the *Spirochaeta pallida*

In 100 consecutive cases, the most painstaking inquiry into the family history in cooperation with some intelligent member of the family failed to reveal the history of nervous and mental disorder in the patients' ancestors or collaterals, save in eight instances Another interesting factor bearing on heredity is the incidence of general paresis in Jew and Gentile in this series There are thirty-two of the former and sixty-eight of the latter The attendance in the outpatient department of the Neurological Institute, where the majority of these 100 cases were first encountered, is about 60 per cent Hebraic Despite this, there were more than twice as many Christians as Jews afflicted with the disease This may be interpreted in one or two ways Either the Polish and Russian Jew has not yet encountered that element of "Kultur" which plus syphilis causes in some instances general paresis, or heredity and the psychopathic constitution has nothing to do with its origin The latter is my conviction

TABLE 1—STATISTICS

Number of patients		100
Male	86	
Female	14	
Age		
Youngest	25	
Oldest	58	
Average age when disease began		42 years
Average duration of the disease when patient came under observation		15 months
Average time that intervened between the infection and the beginning of paresis		15 years
Shortest	2 years	
Longest	30 years	
Race		
Jew	32	
Gentile	68	
Profession and occupation		Practically every one
History of syphilis		11
Indication that syphilis had existed		13
Syphilis denied		53
Positive Wassermann reaction of the blood serum		87
Positive Wassermann reaction of the cerebrospinal fluid		85
Positive Wassermann reaction in serum and cerebrospinal fluid of fifty nine patients who denied syphilis		56
History of the contributing causes		
Alcohol	25	
Physical and mental hardship	4	
Trauma	15	
History of sexual excess and debauchery		7
History of the psychopathic constitution		7

Some day it may be shown that general paresis is caused by a peculiar species or strain of *Spirochaeta pallida*

The most astounding information came from a study of the cerebrospinal fluid of those who denied syphilis, of which there were fifty-nine (some of these were in a state of mental enfeeblement which, of course, made their statements wholly unreliable) Of these, there was found in the blood and cerebrospinal fluid convincing evidence of syphilis The three patients of fifty-five who did not give such indications were a woman whose blood serum alone was tested, another whose husband had died of tabes, and a man who was interpreted when I first saw him as an example of manic-depressive insanity

There are certain features of the facts set forth which call for comment The proportion of women to men is somewhat larger than in most statistics This is to be interpreted that women who live the life which men live have not only its enjoyments but also its penalties It also shows that occupation or profession has no bearing on the etiology of the disease, and that it occurs with greatest frequency during the years of greatest mental and physical activity The statistics regarding the admission of syphilis on the part of the patients are interesting when contrasted with information furnished by study of the blood serum and cerebrospinal fluid of these patients Although only 40 per cent admitted having had syphilis, the blood serum was found to be positive in eighty-seven, the cerebrospinal fluid positive in 85 per cent and the colloidal gold test was positive in 97 per cent of the cases There were four women whose laboratory reactions were strongly positive, whose husbands admitted syphilis The Wassermann reactions of the serum and the cerebrospinal fluid taken from the husbands were negative

Twenty-five per cent of the patients admitted that they used alcohol intemperately, or their relatives made such admission That may or may not be an approximation of the percentage of individuals who use alcohol intemperately

About 8 per cent of the cases give a history of trauma, some injury to the head which may very well have an indirect determining relationship to the disease Most writers on general paresis have been struck by the fact that history of injury to the head is not uncommon in patients with general paresis

Case 1—For instance, a young vigorous Norwegian, aged 35, by occupation a ferry tender, who was brought to us March 10, 1911, because he could not speak distinctly and there was some change in his general disposition, had the following history About six weeks before the development of these symptoms, while running to drop the fender of the ferry or an incoming boat, he tripped over a rope and struck his nose, he was not incapacitated, and he did not seek medical advice, but within a fortnight it was noted that his speech was peculiar, and he himself said, "I do not know what is the matter, but sometimes I cannot say the words" The laboratory examination showed a positive Wassermann reaction of the blood serum and the cerebrospinal fluid, an excess of globulin, and 49 lymphocytes per cubic millimeter

Case 2—Another example is that of a fireman, aged 39, who lived a temperate, hard working life and denied syphilis He was badly injured in the disastrous fire which destroyed the Equitable Building in January, 1912 He was carried out of the building, when the floors collapsed, in an unconscious state, and remained in the hospital a week Whether he was more shocked than physically injured is difficult to determine He was never well after that In October of the same year, when I first saw him, his complaint was that he fatigued easily, especially the right arm and leg, he was very nervous, disturbed by noises at home, and very slow in all his movements and actions, he was subject to attacks of great difficulty in speaking, which lasted for half an hour or a day In addition to the typical mental and physical features of general paresis, his serology was as follows serum Wassermann +, cerebrospinal fluid +, globulin +, Fehling's +, cells 11 He deteriorated with profound rapidity, and died five weeks after coming to the hospital

Table 2 aims to set forth the information that was furnished when the patient's family were asked "What was first noticed to indicate that the patient was not well?" Very rarely was only one symptom or complaint stated It is to be remarked that in thirty-five instances (upward of one third of all the cases) the early symptoms were those that are commonly spoken of as neurasthenia, namely, nervousness, pains in different parts of the body, especially in the arms and legs, and change of outlook toward the world In a great number of instances there were in the same patients insomnia, fatigue without attribution, and mental irritability In reality, therefore, it may truthfully be said that in half the cases of general paresis the patient's complaint at first is more or less indefinite made up of symptoms considered subjective, and founded often in apprehension, which cause the family, and regrettably the physician, to treat the condition lightly

It is astonishing how frequently loss of memory is mentioned as an initial symptom When it is realized that such infirmity is rarely remarked by others until it has reached a considerable degree, it is apparent that it is a very constant and important symptom Taken in conjunction with nervousness and alteration of personality or "change of disposition," it is the most important early feature of the disease

TABLE 2—INITIAL SYMPTOMS OF GENERAL PARESIS

Symptoms	Number
Insomnia	13
Fatigue	21
Irritability alteration of disposition querulousness	19
Loss of memory	40
Headache	14
Dysarthria	33
Eyes affected	10
Pain in arms and legs	13
Nervousness	22
Stupor indifference apathy	12
Garrulousness expansiveness	5
Unsteadines of gait inability to control hands	8
Gastric crisis	2
Attacks of unconsciousness (convulsion)	5
Loss of sense of taste sour taste in mouth	2
Hypochondriacal complaints	11
Dementia (loses his way, forgot how to use tools etc)	7
Depression crying spells indifference	9
Loss of insight ('does not realize he is ill)	14
Maniacal excitement	1

Motor disorder is the next most constant early symptom It displays itself usually in dysarthria, but not infrequently as ataxia of gait, and inability to use the hands dextrously There were eight cases in which disorder of locomotion was the chief symptom when the patient was brought We should include under motor disturbances those cases initiated with attacks of unconsciousness, which invariably mean convulsions There were nine such

In many instances, loss of insight, which is perhaps the most distinguishing feature of the disease, often exists from the very onset "He does not realize or admit that he is sick" is a statement that we often hear On the other hand, in the early course of the disease, a few realize keenly their predicament, and few situations are more painful to witness than that of the individual who appreciates the nature of his infirmity I refer briefly to one such case

Case 3—A young married man, aged 28, who had had syphilis when 18 and received no treatment at the time, came under observation Jan 9, 1912 His history was as follows In August, 1910, he had a series of small sores on the body and extremities, which continued off and on for three or four months In the summer of 1911 he had headache and pain in the top of the nose, for which relief was sought in operation on the nose In September 1911, he was always tired, cross and irritable complained of frequent headaches, depressions pain in different parts of the body and insomnia and would not go to business In October his blood was found to show a positive Wassermann reaction, he was given mercury hypodermically, later large doses of potassium iodid, and later mercurial inunctions Jan 1, 1912, he became delirious smashed furniture, turned on the gas, and tried to persuade his wife to commit suicide with him He was given an opiate, and the next morning he seemed to have no recollection of what had transpired He was very slow in all his actions, it took him two hours to dress, he talked interminably about trivial incidences, he was querulous and unreasonable and gave way to extremes of temper and to violence Although the loss of memory was very apparent, and he himself complained that he could not remember things, he knew, he said, that he was going crazy He reiterated that he was doomed to become insane and die in a straightjacket as his father had done He realized that he could not conduct his business, and that there was only one eventuation for the disease that had overtaken him These periods of apprehensiveness would come on him in attacks

After he had been in the hospital for two or three days, the detailed interviews showed an excellent memory, keen capacity for attention, normal effectivity, correct orientation and indeed save for a slight euphoria manifest in trifling overcommunicativeness, his condition was quite normal The customary physical signs of general paresis were present, and the serologic examinations were quite characteristic He died in February, 1914, the disease having run the typical course

DIAGNOSIS AND COURSE OF THE DISEASE

General paresis is an easy disease to diagnosticate if the typical mental features are present, if the majority of the physical symptoms constituting the signature of the disease, as it were, exist, and if the examination of the blood serum and cerebrospinal fluid shows the condition which is pathognomonic of the disease These conditions being present, there can be no doubt of the diagnosis

Of this series, in only one instance was the diagnosis not made The history of that case is of sufficient importance to be cited in brief

Case 4—A bookkeeper aged 35, married, childless, was seen March 5, 1910 His wife related that ten days before, he began losing his appetite, and three days later when he awakened he did not seem to recognize things as he should, and answered only in monosyllables The next day he got up, sat around for a while and did not eat his breakfast, but went to business His employer, who accompanied him, said that he was very forgetful and uncommunicative and when he was asked for information concerning the books would forget to give the answer On an attempt to interview him, the only questions he would answer were one concerning his age, and the other if he had ever had syphilis to which he replied very emphatically in the negative He refused to remove his clothing or to allow it to be removed, or to cooperate in a physical examination The only physical sign elicited was absence of the knee jerks The pupils responded to light, there was no facial or manual tremor The serologic examination was entirely negative During the first week in the hospital he was silent, uncommunicative, answered only in monosyllables, and was apparently not interested in anything or in any one He would eat when fed, but would never voluntarily take food or drink, and gave no heed to the functions of the bowels or bladder At the end of a week he gradually came out of the apathetic state, and in two weeks was apparently quite himself again, desired to go home, expressed realization of his illness, was grateful for the care that had been taken of him, and thought that if he could get into the country and have a change, he would improve rapidly He returned home, and the first evening spent there he seemed to be quite as usual The next morning he lapsed into a stuporous condition again Then began, in alternation, days of stupor and days of mild excitement About the middle of May this alternation disappeared and his speech became dysarthric He displayed great forgetfulness, and childishness in neglect of his person June 4, he was admitted to the Hudson River State Hospital, and his condition was then, Dr Pilgrim stated, a typical one of the tabetic form of general paresis He was later admitted to the Middletown State Homeopathic Hospital, where the same diagnosis was made He died within four years from the beginning of the disease

In five instances it was difficult to make the diagnosis until after prolonged observation and study, from that form of brain syphilis, parenchymatous or vascular, which is spoken of clinically as pseudoparesis The study of these cases and conclusions constitute a sequence to this paper

In brief, it may be said that the only safe rule to follow is to subject all patients in whom one hesitates to make the diagnosis to a laboratory examination of the blood and cerebrospinal fluid It may be humiliating for us to admit that we cannot make the diagnosis from the early symptoms alone, but there are more painful humiliations than this, and one is to have a so-called neurasthenic patient diagnosticated later as a paretic One would be deeply censured for not suspecting paresis in an individual who gave a history of epilepsy occurring for the first time after 25 to 30 (full maturity), and for neglecting to employ every aid for its detection But it is far more urgent to subject the mature man or woman who is depressed, irritable, apprehensive, sleepless, nervous, and who complains of indefinite disagreeable sensations which put them out of tune with everything, to such tests than the epileptic

In the siftings of neurasthenia will be found the early general paretics I am not in a position to say whether the somatic signs of general paresis, which are present in practically every case of the disease, namely, the change in outline of the pupil, the loss of the pupils' reaction to light, tremor of the lips, tongue and hands, alteration of the tendon jerks (exaltation or abolition), and disturbed coordination underlying purposeful movements, are in existence before these initial symptoms They were in existence in practically every one of the patients of this series, but it must be kept in mind that all of these patients had been under treatment before we examined them

THE COURSE OF THE DISEASE

The course of the disease is a variable one, in a few instances it makes uniform progress, and the patient gets worse week by week This variety makes up about 10 per cent of the cases Then there is about another 10 per cent which make partial recovery, that is, recovery which permits the patients to return to their profession or occupation There were nine such instances in this series one physician, one police captain, one patrolman, one carpenter, one tailor, one stockbroker, one merchant and two housewives They all died, save two, within five years after the disease began It is often difficult to convince the families of these patients that the cessation of activity of the disease is not equivalent to recovery

For instance, cases like the following are not uncommon

Case 5—A married woman, aged 41, who had borne four children and had had no miscarriages, and whose husband, a steady, sober printer, denied syphilis, had suffered from insomnia, which was of the most unyielding variety, for fifteen months In addition she complained of pain in different parts of the body, nervousness, and tremulousness of the hands and lips, and it has been noted that she had difficulty in articulation, and that she became irritable, petulant, forgetful and emotional The mental, physical and serologic examinations were typical of the disease Her insomnia yielded to treatment and her general health showed great improvement under the utilization of various forms of tonic treatment A year later her doctor writes "She has improved constantly since she came home, so that she is mentally and physically normal She is able to go visiting, shopping and to the theater and to attend to her household duties"

It is safe to prophesy that within a year the disease will overtake her

It is quite unsafe to make any statement concerning the course of the disease from its conduct during a few months A patient will be going on most favorably, when abruptly the whole picture changes

Case 6—Such, for instance, was the case of a telephone operator, an unmarried woman of 31, who had been able to attend to her work without causing comment or complaint up to two weeks before going to the hospital, where she was brought by her brother, who stated that she was so unsteady on her feet that it was unsafe for her to go into the street alone Her handwriting had become illegible, her articulation was so indistinct that she could be understood only with difficulty, and her employers related that she had become so careless and unreliable in her work that they could no longer employ her In addition to the physical signs of the disease her laboratory examination was serum Wasserman +, cerebrospinal fluid +, globulin +, Fehling's +, cells 109

This patient made remarkable improvement under vigorous antisyphilitic medication, so much so that she was paroled from the hospital to which she went after leaving the Neurological Institute, and remained fairly well for six months Then she relapsed into the condition described above

In many of these cases the inclination is to attribute the improvement in the condition of the patient to treatment The most remarkable was the following

Case 7—W M, man, aged 31, a stenographer, single, who had infection when 24, with cutaneous and mucous membrane manifestations, and had been treated with inunctions and potassium iodid for a year, when seen, April 1, 1912, complained of nervousness, tremor of the hands, inability to articulate distinctly, failing memory and low spirits and was talkative, unreasonable, and showed no insight Serologic examination revealed serum Wassermann +, cerebrospinal fluid +, globulin —, Fehling's +, cells 13 Physical signs Argyll Robertson pupils, absent tendon jerks, tremor of tongue and fingers, and syllabic speech

Between that date and Jan 10, 1914, he was in the hospital many times and received twenty-seven injections of salvarsan His condition improved gradually, and in October, 1913, he seemed to be almost normal, but he manifested no desire to go to work, and accepted with great equanimity support from his sisters October 30, he complained of headache and a little difficulty in speech, that night he had a series of mild convulsions, in the morning he was completely comatose, there were slight rigidity of all four limbs, and retention of urine, and he was unable to swallow He remained in this condition for three days Immediately on coming out of this condition he asked the day of the week, and realized that it was election day The next day he was able to go out and walk After this he became very obstinate and mandatory, gradually developed euphoria and grandiose ideas, and displayed the typical expansive features of the disease

He remained in the hospital till November 22, his garrulousness and unreasonableness had practically disappeared He came to the hospital at intervals of two or three weeks until Jan 10, 1914, since which time he has had no treatment His serology then was serum Wassermann +, cerebrospinal fluid + —, globulin —, Fehling's +, cells 6

July 15, 1915, in reply to a letter asking him to call for examination, he wrote in a bold, steady hand "Your letter inquiring about my condition received In answer I will say that I feel very well and think there is not any need of my going down to see you Thanking you for your kind attention, I remain, etc"

There is a large percentage of cases, namely 20 per cent, in which truly remarkable progress is made The disease being only fairly well marked or typically developed, the patients seem to be going along without very conspicuous change from day to day or from week to week, when suddenly they are seized with a series of convulsions, and all the symptoms of profound physical and mental disintegration After a few days the patient will be up and about, and in about the same condition that he was before the attack, perhaps slightly more euphoric or deficient of insight or interest, or hypomaniacal, but distinctly further along the roadway of the disease

About half of the cases make steady progress, the clinical picture changing little from week to week, but the end of each succeeding year finds the patient worse He usually succumbs within five years from the onset of the disease

TABES, TABOPARESIS AND PARESIS

It is often said, sometimes lightly perhaps, that tabes and general paresis are the same disease attacking different segments of the cerebral nervous system, the one of the cord, the other of the brain They may be the same disease, inasmuch as they are both syphilitic diseases that are the result of a remote and proximate action of the *Spirochaeta pallida*, but they are totally unlike clinically, and quite different pathologically

Psychiatrists, and to a lesser degree neurologists, are inclined to designate patients with paresis plus pain, incoordination and absent tendon jerks as examples of taboparesis There is some justification for this, for there are cases in which the symptoms and signs of the two diseases coexist

Much more rare than these cases of taboparesis are cases of tabes that eventuate in typical paresis, that is, patients who have been under treatment for years for ordinary tabes suddenly develop the typical manifestations of general paresis So far as I can learn from inquiry, such cases are rare, yet I have seen four such cases within the past six years

Brief notes of two of these are

CASE 8—A coachman, seen first, Dec 14, 1909, whose complaint was pain in the legs, shooting in character, which had been in existence for three and one-half years, and which developed six weeks after a fall from a horse, had difficulty in urinating (duration about six months), constipation and impotence The physical signs were irregular, Argyll Robertson pupil, absent ankle jerks, absent right knee jerk, left diminished, slight ataxia of station, but not of gait, and irregular areas of hyperesthesia of the trunk and abdomen He was under observation and treatment for two years Then following the death of his son, he became irritable and unreasonable, finally, he got into a street altercation and was locked up and brought back to the hospital with a typical picture of paresis, which made profoundly rapid progress, and he died within four months from the time of the appearance of the mental symptoms Shortly before his death he developed a left third nerve palsy

CASE 9—Another even more unusual case was that of a man aged 43 who had syphilis when 20, and received customary treatment When 38 he developed tabes, the evolution of symptoms being difficulty in pedal and manual coordination, diplopia (third nerve palsy of one eye, six months later of the other), paresthesia of the hands, and darting pain in chest and upper extremities The objective symptoms were pathognomonic Four years after the beginning of the disease he began to be depressed at times with and without cause but this was not interpreted as indication of mental disorder A year later he became rather abruptly expansive, hypomaniacal and euphoric, and quickly displayed the most typical picture of paresis

THE OUTLOOK FOR THE PREVENTION OF PARESIS

Were the state to treat syphilis, it is likely that paresis might be prevented, until it does, the prevention depends on the physician acting as an individual It is too much to expect that all physicians will have the determination to thwart it or to be unanimous in regarding it as the chief menace to health

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TABETIC OCULAR CRISES

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Ocular crises were first described by P K Pel[1] (1898), but have not been generally recognized, and only a few cases are recorded Oppenheim,[2] even in the sixth edition of his textbook, states that ocular crises with attacks of severe pain in the eyes, secretion of tears, spasm of the orbicular muscles, and hyperesthesia of the eyes and parts about the eyes, are not to be accepted as tabetic until further experience has been obtained It is desirable, therefore, that cases of this character should be made known Oppenheim has observed hyperesthesia of the retina in tabes which interfered greatly with a testing of the light reflex, as the eyes filled with tears on every attempt to take the light reflex

Pel's case was one of tabes with paroxysms affecting both eyes, of ocular phenomena consisting of irritation of sensory, secretory, motor and vasomotor nerves The mental condition of his patient during the attacks was altered. The man was restless and irritable The ocular attacks occurred with sudden severe burning and stabbing pain in both eyes, interrupted by short intermissions Pronounced secretion of tears with photophobia soon followed the pain, and it was difficult for the man to see because of spasm of each orbicularis palpebrarum muscle The attacks varied in their duration Sight was not affected in the intervals In one attack the conjunctiva of each eye was red and swollen, and the eyes and area about the eyes were hyperesthetic, so that examination of the eyes was impossible, and the man felt exhausted after the attack The appearance of the eyes during an attack was like the condition produced by rubbing the eyes in the presence of a foreign body beneath the lids There is no mention of visual phenomena, and the optic nerves were normal The condition was one of irritation of the trigeminal nerves, and the ocular pain was regarded as ciliary neuralgia There was persisting paresthesia in the distribution of the trigeminal nerves

Pel stated that until the time of his report no case of crises of one of the upper cranial nerves had been observed, as crises had been seen only in organs rich in vagus and sympathetic fibers As the trigeminal nerve contains secretory, sensory, motor and vasomotor fibers, crises of this nerve might be expected, and this nerve is often affected in tabes

Pel refers to reported cases of tabes with irritation of secretory fibers of the trigeminal nerves, as secretion of tears (crises lacrymales, dacryorrhee ataxique), violent sneezing (crises nasales) with paresthesia of the nose, and finally increased secretion of saliva (Patrolacci, Fere, Koenig, Klippel) Klippel observed disturbance of taste in tabes Pel speaks of ophthalmia neuroparalytica and tabetic ulcer of the mouth, trophic disturbances of the trigeminus, occurring rarely in tabes

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[1] Pel P K Berl klin Wchnschr, Jan 10 1898, p 25

[2] Oppenheim H Lehrbuch der Nervenkrankheiten Ed 6 1913 p 181

Pel's case differed from the examples he quotes in that it presented a combination of symptoms with pain predominating and occurring in sudden attacks, and therefore like tabetic crises The hyperesthesia of the eyes and parts about the eyes during and following the attacks was important, and the spasm of the lids was regarded merely as a reflex act

The case of ocular crises in tabes reported by Haskovec[3] was not exactly like Pel's case A man, aged 37, had frequent attacks of pain, secretion of tears, and left exophthalmos The left exophthalmos after an attack of pain became so great that the eyeball almost came out of the orbit The secretion of tears was intense The description makes the location of the pain uncertain, but it appears to have been in the eyes No visual phenomena are mentioned

Knauer's[4] patient, a woman with tabes, frequently had pain in the forehead with tenderness to pressure over the upper division of both trigeminal nerves during the pain She had also pain in the right eye and adjoining region, with swelling and redness of the conjunctiva, free secretion of tears, photophobia, and contraction of the pupils Only the right eye was affected in the first attack, but in later attacks the left eye became affected as shown by redness and swelling, hyperesthesia, photophobia, sensation of a foreign body in the eye, and lacrimation The most striking peculiarity of this case was that in one attack the right eye was affected and in another attack the left eye Taste and smell were lost during the attack when there was hyperesthesia of the mucous membranes of the nose and throat, there was disturbance, therefore, in nerve supplies other than that of the trigeminus, but here there was loss of function, and not increase of function in another nerve territory as in my case Knauer explains the loss in his case as a result of the hyperesthesia of the mucous membranes

REPORT OF CASE

A colored man, who has been under my observation many years at irregular periods and is now in the service of Dr C K Mills, has ocular crises of tabes with phenomena of irritation of the visual fibers not previously observed in other cases This man was presented before the Philadelphia Neurological Society in 1910 by Dr F X Dercum[5] to demonstrate that closure of the eyes greatly increased his ataxia, although the man was blind

The case is typically one of tabes in a colored person He has difficult micturition, optic nerve atrophy, ataxic gait, Romberg's sign, shooting pain in the lower limbs, loss of tendon reflexes, etc

The attacks of pain in the eyes and adjoining parts date from 1901, and occurred with tabetic pain elsewhere in the body During the attacks of ocular pain, peculiar visual phenomena developed He described them as flashes of light, twisting and assuming the shape of reptiles, birds, houses, men, various forms of animals, etc He asserted that he saw these objects clearly

At the present time he describes the visual phenomena as follows The attacks of ocular crises occur at irregular periods, and sometimes he has repeated attacks in a day, but the visual phenomena never occur without pain in the eyeballs The pain is intense, jerking, stinging and burning, and the eyeballs feel as though they would come out of the orbits The pain may last half an hour or longer in the eyeballs, and is accompanied by a free secretion of tears The pain may suddenly remit and suddenly begin again with great severity In the ocular crises he may see a body of water, as a pond, which revolves and then bursts, and gives place to figures of live lobsters, crabs and fish, moving rapidly backward and forward, some being red and some brown At times he sees beds of "magnificent" flowers of various colors, which would give him great delight if the pain in the eyes were not so intense He sees also faces of human beings, but not of persons known by him, he also sees blue stars on a brown background

This man has no mental symptoms, he is entirely rational, and realizes that these visual phenomena have no real existence He is totally blind and cannot even recognize daylight

COMMENT

This case resembles the three cases of tabetic ocular crises reported in the literature (Pel, Haskovec, Knauer) in the sudden onset of attacks of severe orbital pain, with free lacrimation, but differs in the occurrence of visual phenomena The latter phenomena recall to mind the scintillating scotomas and visual disturbance of certain cases of migraine or epilepsy, but they cannot be considered as identical with these There is no evidence of cortical irritation in the ocular crises of my case The lacrimation and pain probably are the result of irritation of the trigeminal nerves, and there appears to be a simultaneous irritation of the optic fibers, resulting in visual phenomena I have known visual hallucinations to be caused by hemorrhage into the retina, and have referred[6] to a number of cases in which these phenomena were produced by irritation of different portions of the visual system

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THE HISTORY OF INTRAVENOUS AND SUBCUTANEOUS ADMINISTRATION OF DRUGS *

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With the revival of interest in the treatment by drugs, and the epoch-making studies of pharmacology and experimental therapeutics in the past ten or twenty years, the administration of substances by subcutaneous or intravenous injection is being practiced on a large scale, both in experimental work on animals and in the treatment of patients An inquiry into the historical development of these more exact and certainly more efficacious methods of drug administration may therefore be of considerable and timely interest Curiously enough, although in the domain of surgery we find the names of numerous individuals perpetuated by being tagged to all kinds of minor and unimportant manipulations and operations, in the domain of internal medicine and more especially in connection with medicinal treatment, the origin of some of our most important and life-saving procedures and remedies is shrouded in obscurity It is really our duty, therefore, to ascertain as far as possible and commemorate the names of those who discovered or invented these procedures and remedies

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[3] Haskovec, L Rev neurol, 1906, p 391

[4] Knauer München med Wchnschr, Sept 15 1908, p 1926

[5] Dercum, F X Jour Nerv and Ment Dis, May, 1911, p 281

[6] Spiller, W G The Eye and Nervous System, edited by Pos and Spiller, p 388

* Read before the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland, Jan 18, 1916

Although we at present are logically prone to class hypodermic and intravenous methods together, and owing to the more elaborate technic involved to think of the hypodermic first and of the intravenous injection second, historically the two methods are very far apart, and the intravenous injection of drugs antedated the hypodermic by several centuries It will therefore be considered first

INTRAVENOUS INJECTIONS

If we consider transfusion of blood under intravenous injections, that procedure goes back to the remote antiquity The Egyptians are said to have practiced it Certainly the earliest explicit record of it dates as far back as 1492, when it was recommended for the treatment of Pope Innocent VIII If, however, we confine ourselves strictly to the subject of injection of drugs, the first experiment of that character was performed in England, and that not by a medical man at all It was Christopher Wren, professor of astronomy at Oxford, who first tried the bold experiment of injecting drugs into the veins of animals [1]

Sir Christopher Wren was born in 1632 and died in 1723 He was the son of a clergyman, and at a very young age gave evidence of an exceptionally clever mind While a boy he became interested in natural science and mathematics, assisting, when only 14 years old, Sir Charles Scarborough, physician to King Charles II, in anatomical and other experiments He went to Oxford, distinguishing himself as a mathematician, and took his degree in 1650 His mathematical proficiency was so great that even Newton spoke highly of his work In 1657 he became professor of astronomy at Gresham College, and in 1660 was made Savilian Professor of Astronomy at Oxford He played not a small part in the formation of the Royal Society A versatile genius — mathematician, astronomer, and, as he is best known, one of the world's most famous architects — Sir Christopher found time to dabble in pathogenic experiments In the year 1656 he injected dogs with opium and crocus mettallorum He selected big lean animals with prominent veins, and his injection apparatus consisted of a quill attached to a small bladder The opium, we are told, stupefied the dogs but did not kill them, while the other drug caused violent vomiting

The experiment was repeated with the same results at Pisa by Carolo Fracassato in 1658

The first intravenous injection of a drug in man, according to Fortescue-Brickdale in his monograph on intravenous injections,[2] was also made by Christopher Wren in 1657 It appears that a certain foreign ambassador at the Court of St James, being interested in Wren's experiments, offered a delinquent servant of his as a subject for the experiment An injection of vinum emeticum was to be made, but the victim either really or craftily fell into a swoon, and the experiment had to be discontinued

A little later, in 1662, J D Major, an English practitioner, successfully injected human beings intravenously, and describes that operation under the title of "chirurgia infusoria" [3]

Escholtz[3] published a book in 1665 in which he described intravenous injection, and mentions three patients treated by himself One was a soldier with an ulcer of the foot, probably syphilitic, who was injected with aqua plantagenis in the crural vein, the other two were injected with aqua cochlcariae for some obscure affections

In 1666, Fabricius[4] described three cases treated by him in Danzig The interesting point to note in this connection is that one of the patients was a soldier with syphilitic exostoses who was injected with scammonium The other patients were epileptic women injected with resin of jalap

Schmidt of Hamburg[5] in 1667 communicated to the Royal Society a report of five patients whom he treated by intravenous injections Two of these were syphilitics, and were injected with jalap, which seems to have been a favorite remedy at the time

Two works appearing at this early period give a good account of the condition of intravenous medication at that time One is a dissertation by G F Stirius,[6] a pupil of Ettmuller, in 1668, in which he reviews the subject as a whole, adding an account of his own experiments The work is in Latin He mentions the substances used for injection, alcohol, water, opium, tartar emetic, etc, and holds that infusion is applicable to most cases, except in pregnant women An interesting point to be noted in connection with his discussion of opium is that even at that early date the observation was made that opium acted on cats very differently from the way it affected dogs The latter were narcotized while the former were put into a state of delirium [7]

The other summary of the subject is a chapter on infusion or intravenous injections in Purmann's work on various surgical procedures,[8] published in English in 1683 He mentions a long list of substances which were injected in animals and man The most popular ones seem to have been purgatives, emetics and narcotics

> They made their first tryals on dogs, and only with spring water They proceeded to purging and vomiting medicines which being injected into the vena cruralis, they perceived it to have there different effects Purging medicines being injected they purged, and vomited of the infusion of crocus metallorum Opium made them sleep and too large a dose took away their lives

He himself, by the way, was injected on two occasions with aqua cardui without any untoward results

Altogether, however, the experiments at this first or early period in the history of intravenous injections were rather discouraging in their results, and for that reason the practice fell into disrepute and was not revived until the end of the eighteenth century

The reason was that, like most novel procedures, infusion was applied indiscriminately in all kinds of cases

The three interesting facts worthy of remembrance about this earliest period are, first, the discovery of intravenous injection by the versatile Sir Christopher Wren in 1656, second, that one of the first drugs injected was what is even now probably the most important drug we possess — opium, and third, that even as early as 1666, intravenous injections were practiced in the treatment of syphilis, a fact worthy of note in connection with our present salvarsan therapy

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[1] Bishop Spratt History of the Royal Society of London, 1667, p 317

[2] Fortescue Brickdale Guy s Hosp Rep 1904 lviii 15

[3] Cited by Fortescue-Brickdale (Footnote 2)

[4] Fabricius Phil Trans, ii 569

[5] Schmidt Phil Trans iii 966

[6] Stirius G F Dissertatio medica de Chirurgia infusoria, Leipzig 1668

[7] So much opium as is (ordinarily) given to man will throw a cat into a fatal delirium whereas it will cause no harm to a dog (*Opii tantum quantum hominem injecare felem vero in rabiem lethalem conjicere potest nullam noxam cani propinatum infert*)

[8] Purmann Matthieu Godefroi *Chirurgia Curiosa* London 1706

The second period in the history of intravenous injection of drugs or infusion may be said to begin about the end of the eighteenth century and extend to the middle of the nineteenth century, and is characterized by more careful experimental work along toxicologic and pathologic lines In this connection are to be noted the names of some very famous medical men, Fontana, Magendie, Bichat, Nysten, Orfila and others

Freind,[3] whose works were published in 1773, experimented with injections of acids and alkalies on animals He was also the first to demonstrate the *danger of the entry of large quantities of air into a vein* Nysten,[9] Bichat, Diffenbach[10] and Magendie[11] did further work on air embolism, and Gaspard[12] demonstrated the impracticability of using oil injections

Among the most important work in this period were *the attempts to cure tetanus and hydrophobia by intravenous injections*

Baron Percy[13] in 1814 treated two series of cases of tetanus with injections of opium and stramonium, stating that in the first group three of five patients recovered and in the second, five out of eight Magendie in 1823 made various experiments on animals, healthy and rabid injecting them with warm water and opium but with little success He made the interesting observation that a rabid animal required more than the usual amount of a sedative to produce narcosis Magendie also tried to treat cholera by injection of camphor in dilute alcohol

Daniel,[14] in a dissertation in 1827, gave a full account of the experiments up to that date Among the drugs which he tried to inject was mercuric chlorid, of which he found that one-quarter grain was fatal to a middle sized dog

Among the boldest experiments of this period are those of the Boston physician, Dr E Hale, who succeeded in injecting himself with half an ounce of castor oil The result was really remarkable, for he actually survived to relate the tale of his experience

In 1869, Dr G B Halford[15] reported before the Victoria Medical Society some observations, experimental and clinical, on the injection of ammonia in cases of snake bite This work attracted a great deal of attention, but was soon contradicted by other observers and the practice was eventually abandoned

Another important contribution to the subject was the injection by Ore[16] in 1874 of chloral instead of opium in tetanus and hydrophobia He had some success at first, but very soon the practice was found dangerous and was also abandoned

The next or third period in the history of intravenous injections is distinguished by the development of bacteriologic knowledge, and the injections of substances then undertaken had in view one of two objects, namely, either the increasing of the patient's resistance to infection, or the destruction of the deleterious agents of infection themselves Under the first heading must be mentioned first the injections of balsam of Peru and later of sodium cinnamate in tuberculosis by Landerer[17] in 1892, and second, the injections of *sodium cacodylate* for pernicious anemia and other conditions by Gautier[18] about 1897 Under the second heading the most important contributions to note were the famous work of Baccelli[19] in 1890 on intravenous injections of quinin in malaria, and the work of Credé[20] in 1901 on the injection of silver salts in all kinds of infections These investigations are too well known to be discussed in detail in this place They paved the way to our present rational intravenous therapy, based on careful pathologic, pharmacologic and chemical research

The number of drugs now used for intravenous injections is increasing daily Some of these, such as the administration of salvarsan, strophanthin, quinin, etc, are of proved and established value, others are of doubtful usefulness, and many others are actually deleterious when injected into the veins, and their administration through that channel is to be discouraged However useful intravenous medication may be in special cases, its field of application is certainly more limited than that of hypodermic injection, which will now be considered

HYPODERMIC INJECTIONS

A hypodermic or subcutaneous injection, like so many other important manipulations practiced by physicians daily, seems to us to be a very simple procedure, yet its discovery was really a great intellectual achievement, and it was not evolved until recently The desirability of administering medicinal substances through channels other than the alimentary canal was appreciated long ago, and the skin as an absorbing organ was thought of also very early We therefore find, preliminary to the introduction of our present subcutaneous method, the employment of the so-called *epidermatic* method, that is, the application of substances in the form of ointments, liniments, etc, directly to the skin A modification of this form of treatment was the so-called *iatraleptic* or *anatripsological*, by which was meant a vigorous rubbing in of substances into the integument

An advance toward the present mode of treatment was the so-called *endermic* method, by which was meant the application of medicaments directly to the cutis instead of the epidermis This was done in several ways, the simplest being by loosening or removing the epidermis by means of blisters or caustics, and then applying the drug to the raw surface Another method was by destroying a small area of epidermis by touching it with a hot hammer A still different method employed in some cases was by soaking threads or setons in solutions of morphin or other substances and passing them by means of a needle through folds of the skin The endermatic method, according to Eulenburg,[21] was introduced by Lembert and Lessier about 1823

A still further advance toward modern hypodermic therapy was the practice of *inoculation* This method was used extensively of course for vaccination with cowpox virus, but the French surgeon LaFargue[22] in

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[9] Nysten Rocherches pour faire suite a celles de Bichat, Paris, 1811

[10] Diffenbach Jour compl du dict d sc med, 1829, p 371

[11] Magendie Jour compl du dict d sc med, 1823, p 312

[12] Gaspard Jour compl du dict d sc med, 1823, p 309

[13] Percy Jour compl du dict d sc med, 1818 p 26

[14] Daniel De Medicamimum in venos injectione, Dissertation, Berlin, 1827

[15] Halford, G B Australian Med Jour, 1869, xiv, 333

[16] Ore Compt rend Acad d sc, 1879, pp 515, 651

[17] Landerer Berl klin Wchnschr, 1890 xxvii, 280, 312

[18] Gautier Bull de l'Acad de med July 3, 1901

[19] Baccelli Tr Tenth Internat Med Cong, Berlin, 1890

[20] Crede Berl klin Wchnschr, 1901, xxxviii 991

[21] Eulenburg, A Die hypodermatische Injection der Arzneimittel Berlin, 1867

[22] LaFargue Bull de therap, 1897, xxxiii, 19

1836 proposed its use for the administration of other remedies None of the methods mentioned, however, proved satisfactory

The invention or discovery of injecting solutions of drugs under the skin is generally attributed to the Scotch physician, Alexander Wood of Edinburgh in 1853 Recent investigations, however and especially the valuable contribution on the subject by Dr Charles A Pfender[23] of Washington D C, prove conclusively that the first use of hypodermic injection in therapeutics was not made by Wood but by an Irish surgeon, F Rynd in 1844, or about ten years earlier I myself have carefully gone over the literature on the subject in the Surgeon-General's Library, and find that Pfender's conclusions are incontrovertible Rynd published in 1845 a short case report from the Meath Hospital and County of Dublin Infirmary entitled "Neuralgia Introduction of Fluid to the Nerve"[24]

Quoting from his description of one of the cases, we read

> On the 3d of June a solution of 15 grains of acetate of morphine dissolved in a drachm of creosote was introduced to the supra-orbital nerve and along the course of the temporal malar and buccal nerves by four punctures of an instrument made for this purpose.

What the instrument was he did not describe in detail until 1861 when he published a description of his syringe[25] This was a rather crude affair, through which the fluid was injected through a hollow needle by gravitation We thus see that to Rynd belongs the priority of discovery of hypodermic injection

It was through Alexander Wood, however, that the hypodermic method was applied in a large number of cases and carefully written up and popularized For that reason Wood has been generally regarded as the founder of hypodermic medication

Alexander Wood was born in Edinburgh, Dec 10, 1817 He came from a family of physicians, and early displayed his exceptional medical skill While serving in the capacity of secretary to the Royal College of Physicians of Edinburgh, he conceived the idea of injecting drugs under the skin for the relief of pain He was very much interested in the treatment of neuralgia, and was following a method suggested by Valleix of applying a succession of blisters along the course of the affected nerve After applying the blisters for a period of time he would take them off and dress the raw surface with an ointment of morphin, to which he attributed the success of his treatment While doing this it occurred to him to try the applications of morphin by injection directly to the affected point

In his first report on the subject in 1853, Wood says

> Having occasion about the end of 1853 to endeavor to remove a nevus by injection with acid solution of perchlorid of iron, I procured one of the elegant little syringes constructed for the purpose by Mr Ferguson of Giltspur Street London While using this instrument for the nevus it occurred to me that it might supply the means of bringing some narcotic to bear more directly than I hitherto had been able to accomplish on the affected nerve in neuralgia I resolved to make the attempt and did not long lack opportunity

This led to Wood's experimentation with hypodermic injections, which culminated in his classic contribution on neuralgia[26] Quoting from the work, some of Wood's conclusions were

> 1 Narcotics injected into the neighborhood of the painful point of a nerve affected with neuralgia will diminish the sensibility of that nerve, and in proportion diminish or remove pain
>
> 2 The effects of narcotics so applied are not confined to this local action, but reach the brain through the venous circulation and there produce narcotic effects
>
> 3 In all probability what is true in regard to narcotics would be proved to be equally true in regard to other classes of remedies
>
> 4 The small syringe affords a safe, easy and almost painless method of exhibition
>
> 5 Destitute as we are of any precise experiments as to the applicability of cellular tissue as a medium for the resorption of medicinal agents, the experiments made with the syringe show that it seems to offer an excellent surface for the absorbent action of the venous system
>
> 6 The method now detailed seems as extensively applicable as any of the methods of applying remedies to the skin, whether enepidermic, iatroleptic endermic, or by inoculation

Wood's work immediately won recognition, and was received enthusiastically, especially by Charles Hunter

Although Wood appreciated that general or systemic effects might result from local injections of drugs, he still seems to have entertained the idea that the maximum benefit from the hypodermic was exerted at the place of injection It remained for Hunter[27] in 1859 to give the important demonstration that it is unnecessary to make the injection at the seat of the pain

It would take us outside the limits of this paper to trace the history of hypodermic medication in detail after that date The name of Ruppaner of Boston, however, who is responsible for the introduction of the method into the United States, must not be passed unmentioned Ruppaner's work[28] appeared only a few years before the Civil War, and it is interesting to note that John S Billings,[29] in his reminiscences of the Civil War, speaks of the hypodermic syringe as being a constant requisition at that time

On reviewing the history of the subject it is well to note again that just as in the case of intravenous injection, so in the case of hypodermic injection, opium was one of the first, if not the first drug thus administered In reading about the extensive application of opiates by this method I have been further struck by the enormous doses which our predecessors used to administer Half a grain doses of morphin were very commonly given Hunter mentions a man with delirium tremens whom he gave an injection of three-quarters grain of morphin acetate, and another patient actually received an injection of 1 grain

A word as to the development of the hypodermic syringe The syringe employed by Rynd seems to have been devised by himself Wood, as already noted, first used a syringe made by Ferguson Soon after that various modifications of Ferguson's syringe were introduced I need here mention only the instrument of Pravaz, which is the prototype of our modern hypodermic syringe Charles Pravaz of Lyons was deeply interested in the treatment of aneurysms, and while experimenting with methods of introducing caustics into aneurysms and nevi he thought of injecting a solution into the sac by means of a needle and syringe He had such an instrument constructed, and this soon became known as the Pravaz syringe In January, 1853, Pravaz[30] reported his results of injecting iron perchlorid into aneurysms by this method The Pravaz syringe is the model copied and modified by later manufacturers Those who are interested in the development of the hypodermic syringe should not fail to visit and inspect the remarkable collection of these instruments in the care of Dr Lamb at the Surgeon-General's Museum in Washington

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[23] Pfender C A. Washington Med Ann 1911 x 346
[24] Rynd Dublin Med Press March 12 1845
[25] Rynd Dublin Quart. Jour Med. Sc. 1861 xxxii
[26] Wood Alexander New Method of Treating Neuralgia by the Direct Application of Opiates to Painful Spots, Edinburgh Med and Surg Jour 1855, lxxxii 265
[27] Hunter, Charles Med Times and Gaz. March 5 1859
[28] Ruppaner Boston Med and Surg Jour, 1860 lxii
[29] Billings John S Tr Coll Phys, Philadelphia 1905 xxvii 117

A RATIONAL TREATMENT OF THE MORPHIN HABIT

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The method of treatment for chronic morphinism which will be discussed has been successfully employed in a large series of cases at the House of Correction and Sceleth Hospital, Chicago, and in private practice An outline[1] of the method appeared in THE JOURNAL of the American Medical Association early in 1915, and in a series of papers devoted to the treatment of chronic drug addictions, which was published in THE JOURNAL about half a year later,[2] the method was discussed in more detail and its advantages over other regimens in vogue pointed out The treatment, therefore, is fairly well known to the profession at large

A more comprehensive description of the method is in order because the previous descriptions have omitted many of those qualifying details which are of such great moment in the successful application by others of a new plan of therapy, and particularly because the plan is simple, nearly always successful, and is readily carried out even in a private hospital or at the patient's home, and by any physician

It is not my purpose to compare the method with others perhaps better known, such as the Lambert-Towns,[3] the Pettey[4] or the Erlenmeyer[5] treatment Such a comparison is unnecessary On the basis of results, convincing evidence seems available to show that this method is a rational and at the same time an easily applied treatment Those who are interested in a dissection of other methods commonly employed are referred to the papers already mentioned for a very thorough comparative analysis

Though there are many angles to the plan, its essence rests in the formula

Scopolamin hydrobromid	gr 1/100
Pilocarpin hydrobromid	gr 1/12
Ethyl morphin hydrochlorid	gr 1/3
Fluidextract cascara sagrada	m 15
Alcohol	m 35
Water	qs ad ʒ 1

The amount prescribed and the indications for its continuance or modification vary with the case Patients who are addicted to the use of more than 10 grains of morphin a day are given 60 minims of the mixture every three hours, day and night, for six days The dose is reduced to 30 minims on the seventh day, to 15 minims on the eighth day, and on the ninth day to 15 minims three times during the day only On the tenth day the mixture is discontinued altogether and tonic treatment begun, as outlined below

Addicts accustomed to the use of less than 10 grains of morphin a day and more than 5 are started with a dose of 45 minims, which is reduced on the seventh day in a manner analogous to that just detailed, while to those who have been taking less than 5 grains, only 30 minims are given as an initial dose

The dangers associated with the use of this combination are trivial Scopolamin delirium occurs in about 4 per cent of the cases Should delirium develop, the scopolamin should be omitted for a few doses, and as the condition improves, added once more in smaller quantities The greatest danger, however, collapse, does not arise from the scopolamin mixture per se, but is incidental to the withdrawal of the morphin The tendency to collapse is undoubtedly favored by the presence of two drugs which act on the vagus—scopolamin, which is vago-inhibitory, and pilocarpin, which is vagotropic If the pulse falls below 40 or goes above 120 per minute, the mixture is stopped and the patient is given the only drug which can offset the collapse, namely, morphin itself The latter is injected in one-third grain doses every fifteen minutes until results are obtained Patients in collapse should not be given too large doses of morphin, or its derivatives, after treatment has been in progress for several days, as the dose to which the addict has been accustomed is likely to be overwhelming The vomiting and insomnia which occur more or less constantly are not due to the scopolamin mixture, but occur with any treatment, and accordingly are not to be looked on as special complications

It may be stated as a safe criterion that if on the third or fourth day of treatment by this method the pupils are dilated and react to light and accommodation, the patient is reacting properly and the outlook is good

The rationale of this combination is that scopolamin hydrobromid is one of the atropin series, and, so far as atropin is the physiologic antidote to morphin, represents the specific element of the mixture In the strict sense, of course, it is not a specific Its action, in the main, is similar to that of atropin, but in certain essential particulars it is more suitable for the treatment of chronic morphinism Unlike atropin, it is sedative, causing a depression of the central nervous system, and its action on the peripheral nerve ends is more powerful Furthermore, even in small quantities it depresses the brain, 1/120 grain, according to Cushny, being sufficient to produce sleep, it is apparently less toxic than the other members of the atropin group, and finally, quoting from the same observer, "it is most effective as a hypnotic when sleep is prevented by motor excitement, and the sleep seems to arise from the relief of this condition and not from depression of the consciousness" Thus, while possessing the chief properties of atropin, it is additionally valuable because it tends to offset such abstinence symptoms as the peripheral pain, insomnia due to motor excitement, and cerebral unrest, in the fact that it is a less dangerous drug than atropin, and because its action is manifest with small doses

Pilocarpin acts at the same point as does scopolamin, but in an antagonistic way It is used, therefore, to combat certain undesirable by-effects of the scopolamin, such as the drying up of the secretions, the dilatation of the pupils, the acceleration of the heart (atropin vagus inhibition), and of the respiration and to promote secretion and excretion

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[30] Pravaz Compt rend Acad d sc, 1853, xxxvi, 88

[1] Sceleth, C E A Treatment for Morphin Addiction, Correspondence, THE JOURNAL A M A, March 13, 1915, p 927

[2] The Morphin Habit, Therapeutics, THE JOURNAL A. M A, Nov 20, 1915, p 1815, Nov 27, 1915, p 1912

[3] Lambert, Alexander The Obliteration of the Craving for Narcotics, THE JOURNAL A M A, Sept 25, 1909, p 986

[4] Pettey, George E The Narcotic Drug Diseases and Allied Ailments F A Davis, Philadelphia, 1913

[5] Cushny, Arthur R Text Book of Pharmacology and Therapeutics, 1915

Ethyl-morphin hydrochlorid (dionin, Merck), of which the patient receives 4 grains a day during the first six days of treatment, that is, when given 1 fluidram of the mixture, serves merely as a substitute for the morphin withdrawn It may be remarked at this point, in reply to possible adverse criticism relative to the giving of one habit-forming drug as a substitute for another that the administration of dionin for nine days (in diminishing doses during the last three) is insufficient to cause a new habit, and that such a contingency actually does not arise

The remaining constituents of the formula require no special word of explanation

As regards the other steps in this mode of treatment a few remarks will suffice The patient on admission is put to bed, given three compound cathartic pills followed by a saline cathartic (Epsom salt), and at once started on the scopolamin mixture During the first few days of the course the diet should be light and easily assimilable, and liquids should be pushed, the patient should drink 3 pints or more of water a day On the tenth day, at which time the mixture is discontinued, strychnin nitrate, one-thirtieth grain, is given for three doses, the following day the amount of strychnin is reduced to one-sixtieth grain, which is continued three times a day for a week

By the fifth day, as a rule, the patient's desire for morphin is gone He then manifests a desire for a more substantial diet and begins to put on weight rapidly When the mixture has been stopped and the patient's strength permits, graded exercises, in the open if possible, are instituted with the purpose not only of improving his physical condition but of allowing him to acquire a bodily fatigue, which is recognized by all as the best antidote to the insomnia—the abstinence symptom most likely to persist and the most difficult to conquer A warm bath of 110 F for ten minutes, or a neutral bath of from 94 to 98 F for twenty minutes, will often relieve restlessness and insomnia Carbonated waters are very gratefully received

Contrary to the idea of many, morphin is not taken by the addict after the first few weeks, with the purpose of producing a pleasurable relaxation Taken originally to combat pain, relieve exhaustion, etc , it is continued in increasing doses to prevent the much feared abstinence symptoms, or, as it is put by the habitue himself, "to make himself normal" again so that he can accomplish his usual work in some degree, not extraordinary results, as some believe

The "cure" which obviates these abstinence symptoms to the greatest extent, without at the same time introducing new and dangerous factors, such as collapse, may be regarded as the best regimen available And it is to this feature of the plan that I would particularly draw attention In considerably over 1,500 cases of variable severity I have rid morphin addicts of their habit with no medical treatment in any form except the scopolamin mixture, the initial saline laxative, and the terminal strychnin administration These 1,500 patients received no morphin as such whatsoever Severe collapse was not encountered, the only abstinence symptoms of any importance being insomnia, vomiting and diarrhea , while in a small percentage of cases, scopolamin delirium developed

This relatively simple method, as already stated, has the further advantage of not requiring institutional care It can be successfully carried out with the aid of an intelligent nurse in any private hospital or in the patient's home Indeed, the average physician in general practice need have no hesitancy in undertaking the treatment, if my experience is to be accepted as a criterion

In about 2,500 additional cases, I have employed one of two modifications of this therapy The first of these I have already touched on, namely, the giving of morphin in one-third grain doses to control collapse This may occur in some cases, chiefly because of some previous impairment of the heart A great deal of morphin is rarely necessary I may cite as an illustration a young man recently under observation, who had been accustomed for six years to a daily dose of 20 grains of morphin In this case an entirely successful result was obtained with the use of only 2¼ grains of morphin, through the entire course of treatment

The second modification is the quick reduction method, so far as the term is applied to the withdrawal of morphin as such This plan is that generally known as the rapid reduction method, and is carried out as follows The patient, when first presenting himself, is given one half of his accustomed dose of morphin distributed over twenty-four hours On the following day this amount is halved, being administered at the accustomed time The next day one eighth of the usual amount is given , after which morphin is entirely discontinued During this process of reduction, the scopolamin mixture is administered as previously outlined

This regimen has the advantage over the first two described in that the patient is entirely free from abstinence symptoms, which are unnecessary in the vast majority of cases, as indicated by our statistics based on the use of the scopolamin mixture alone Since the enactment of the Harrison law, I feel that the giving of morphin during the treatment, in quickly decreasing doses, is more justifiable than formerly Before the law went into force, and morphin was easily obtained, it served as a valuable warning to many individuals to allow them to suffer a few pangs of deprivation—of course, never to the danger point, merely in order to disillusionize them as to the comfort with which the habit could be conquered Today, with the drug no longer accessible, the likelihood of a recurrence is less, and the lesson is not so urgently needed The chief indication, however, for the employment of the third method is in individuals of considerably impaired strength, in those with an enfeebled myocardium, and, to some extent, in private work Old age is no bar to treatment, a patient aged 72 years, who used laudanum for the past thirty-two years and was using 4 drams daily, was treated with 15 minims of the mixture every three hours, and has been free from the habit for the past eight months

As to complications in general, any condition that will not produce acute pain will be improved by the removal of the drug habit

Heroin cases should be treated the same as morphin addicts For opium addicts 30 minims of the mixture should be administered every three hours, and the ethyl-morphin hydrochlorid reduced to one-eighth grain per dose For cocain addicts, if it is desired to have the patient avoid any discomfort, he should be given 15 minims of the mixture every three hours without the ethyl-morphin hydrochlorid for three days, when cocain is used alone it is always safe to discontinue it abruptly without any treatment, as there is never any danger of collapse. With the morphin addict who is using 10 grains or more a day, however, if it is abruptly or gradually discontinued, without suitable treatment, there is danger of death from cardiac collapse. I doubt if the system can assimilate more than 10 grains of morphin at a dose. I make no distinction between the patient using 10 grains or 60 grains per dose.

Certain phases of chronic morphinism present different problems. Chief among these, perhaps, are patients first seen in collapse after long enforced abstinence or after misdirected treatment elsewhere. It is in this type that the mortality is highest, for frequently the patient's condition is so serious that morphin and cardiac stimulants are no longer of avail. There were seven deaths from the middle of July, 1911, to February, 1916. These patients were under observation on an average of five days each, this average being as high as it is because one patient lived eight days and another thirteen.

I am informed by Dr. E. R. LeCount, who made the postmortem examinations, that the only noteworthy conditions found were in one instance bronchopneumonia with scars and leptomeninges resembling those produced by syphilis. In three others there was bronchopneumonia, and in one of these an associated hypertrophic pulmonary emphysema. In another case the morphinism was accompanied by alcoholism.

Morphinism associated with delirium tremens is a serious type. The indication here is to treat the delirium tremens, at the same time giving the patient sufficient morphin to keep him comfortable. The cocain habit when combined with the use of morphin, which was true in about 35 per cent. of our cases, presents no particular difficulties. In the matter of prophylaxis, I would call attention to certain rules in the use of morphin by physicians by the observance of which the spread of the habit can be materially restricted. It is a terrible stigma on our profession that in 75 per cent. of the cases of chronic morphinism, the drug was first administered by a physician, and that in less than 10 per cent. it was not given for its prime indication—incurable pain. Too often it is not realized that small continued doses are dangerous, any amount of morphin sufficient to alleviate pain or to ease the patient is enough to create a habit. The contention that normal persons never become addicts in our experience is not true. Even in a strong-willed individual the regular use of a narcotic for three weeks can establish the habit, while, after three months of such addiction, it is almost impossible for the patient unaided to discontinue its use. Again, when morphin is prescribed in the postoperative treatment of cases, it should be the rule not to discharge the patient until he has been without the drug for at least three days. If this precaution is not observed, the tendency is great to resume its use at home. Over 85 per cent. of our morphin addicts use the hypodermic method. Incidental to this feature is to be emphasized a defect in the Harrison law, in that it makes no provision for the restricted sale of hypodermic syringes.

As to recurrences following this plan of treatment, there is to be said: Abstention from the use of morphin depends not on the use of this drug or that drug, but entirely on the individual. The man who has been given the drug for the alleviation of severe pain, the *cause of which has been removed*, will probably not return to the habit. This statement must be modified as follows: If he returns to associates who use the drug, he will very likely relapse, but even if he changes his environment, little can be expected of him if he was originally endowed with no strength of character. The human zero plus or minus the morphin habit equals zero! Our conclusion, then, as to the likelihood of recurrence may be formulated thus: The outlook is good for the man of some moral, mental and physical strength, for whom an opportunity to work can be secured in a healthy environment. The comparative difficulty of securing morphin today is an added factor favoring such an individual.

SUMMARY

There is no specific treatment for the morphin habit. The plan outlined above, however, seems to meet most accurately the specific indications from the pharmacologic point of view. Other advantages of this regimen are its simplicity, in that it can be carried out in private hospital or home, and by the nonspecialist, and its freedom from abstinence symptoms, especially the more dangerous ones.

On the other hand, no plan of therapy, however logical or successful, can assure freedom from recurrence. This is entirely a matter of the individual. One with no natural force of character is likely to relapse, as is also one who returns to a former vicious environment, while the man of higher type, who is anxious to reform, is capable of doing serious work and if given the opportunity, has an excellent chance of permanently remaining cured.

I wish to acknowledge the splendid assistance that, from time to time, has been given me by Dr. A. F. Beifeld, both in clinical observation of many of the patients whose treatment is considered here, and also for help in the preparation of this article.

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TREATMENT OF CASES OF EPIDEMIC MENINGITIS

ILLUSTRATING THE IMPORTANCE OF FREQUENT REPETITION OF THE INJECTION *

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The most common two mistakes in serum treatment of epidemic cerebrospinal meningitis seem to be giving too few doses of serum if the patient improves considerably after the first one or two injections, and failing to persist with the serum if the improvement is very slow. It has been the experience of the meningitis department during the past five years that it is rarely safe to give less than four doses of serum on consecutive days, even if the improvement clinically is very rapid and the organisms disappear from the fluid after one or two injections. In cases which have been running on for some time and in which the patients are evidently improving when first seen, one or two injections of serum are sometimes sufficient. Occasionally in a case seen very early and clearing up quickly, only three injections may be given. A case of average severity usually requires from four to seven injections It is safer to give the injections on consecutive days until it seems evident that the patient is out of danger, than to skip a day or two when a slight improvement occurs, thereby giving the organism a chance to increase Puncture for the relief of pressure may have to be done several times during convalescence At such punctures, a little serum may be injected, especially if a large amount of fluid is withdrawn In a small percentage of cases—from 5 to 10 per cent —a large number of injections may be necessary before the termination of the case A certain number of such cases terminate fatally

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* From the Bureau of Laboratories, Department of Health, City of New York.

REPORT OF CASES

The following cases, recently treated by the department illustrate very well the necessity of patience and persistence in administering serum when the progress is discouragingly slow

Case 1—H M man, aged 19 seen first July 16, 1915 with negative past history, complained of headache and pain in back July 5 which resembled a mild influenza and cleared up in a few days the patient being quite well until July 14 when the headache returned and vomiting occurred There was also a chill When examined on the 16th he was delirious there was marked stiffness of the neck, Macewen s and Kernig s signs were positive, the knee jerks were slightly increased, the pupils were equal and reacted to light, the pulse was 60 and regular, the temperature was 101 4, respiration was Biot in type, there were no paralysis and no eruption Fifty c c. of cloudy fluid were withdrawn by lumbar puncture and 20 c c of antimeningitis serum injected The fluid showed a great increase in cells, 95 per cent being polymorphonuclears, and intracellular gram negative cocci by smear, albumin and globulin were both greatly increased, there was no reduction of Fehling s solution July 17, the condition of the patient was somewhat better, the temperature was normal, he was still delirious Forty-five c c of very cloudy fluid were withdrawn, and 20 c c of serum injected Punctures were repeated and serum was administered July 18, 19, 20, 21 and 22 Beginning July 19, the amount of serum given was increased from 20 to 35 c c., the amount of fluid drawn being at all times greater than this, and until the 21st, exceedingly purulent, an inch or more of pus settling to the bottom of a large test tube containing from 25 to 30 c c. of fluid That of July 22 was much clearer There continued to be a pure culture of meningococci until the fluid of July 21, though that of the 19th was scanty Fehling s solution was not reduced until the 21st, that of the 22d showed good reduction The albumin and globulin were always greatly increased The temperature was normal beginning with the 17th Much of the time there was great difficulty in swallowing owing to the extreme retraction of the head, and it was necessary to give small quantities of food at frequent intervals July 23 and 24, as the fluids had been sterile for two days and as the patient seemed considerably better, no punctures were done On the 25th, the puncture was done to relieve pressure, 45 c.c. of fairly clear fluid were drawn and 15 c.c of serum injected This fluid was sterile and gave a good reduction of Fehling's solution For the next five days, the patient seemed to be doing well, the temperature was normal, he became clearer mentally, the retraction of the neck lessened, and he was able to take nourishment very well July 31, however, a relapse occurred, the temperature went up to 103, the delirium returned Forty-five c c of very purulent fluid were withdrawn and 35 c c of serum injected This fluid showed degenerated extracellular gram negative cocci by smear, but the culture was sterile. The punctures were repeated daily until August 10, large amounts of fluid, from 50 to 75 c c, being withdrawn, but since the cultures were constantly sterile, small quantities of serum, from 15 to 20 c c., were injected The fluids of August 5, 6, 8 and 9 showed a reduction of Fehling s solution August 6 9, 13 and 16 an autogenous vaccine was given in doses of 250, 500, 750 and 1,000 million, August 11, 13 and 16, the punctures were repeated, the fluid becoming clearer and showing a good reduction of Fehling s solution, the quantity obtained by the last puncture being only 30 c c August 19, the condition was so much improved that a puncture was not considered necessary Twenty punctures had been made Much of the time the patient was desperately ill the family gave up hope almost entirely, and considerable persuasion was necessary to induce them to allow the treatment to be continued The patient was extremely emaciated as most of the time during the relapse, swallowing had been very difficult owing to the extreme retraction of the head However the recovery went on smoothly, though slowly The absence of fever was very unusual, the temperature being elevated for only a day or two at the onset and again at the beginning of the relapse Curiously enough when the delirium had entirely cleared up he remembered nothing of his illness or of the punctures, but simply that he had gone to bed with a very severe headache

The other two cases were somewhat similar and need not be given in so much detail

Case 2—W F, man aged 20 seen March 24, had had pulmonary tuberculosis in an inactive form for two years, he had not felt well for two weeks, but had been acutely ill only two days, the symptoms were typical of meningitis, and on lumbar puncture, 60 c c. of cloudy fluid were withdrawn and 20 c c of antimeningitis serum injected The fluid showed meningococci both by smear and culture, Fehling's solution was not reduced March 25, the temperature had fallen from 104 to 100 5, and the patient's condition was better, 75 c c of clear fluid were withdrawn and 20 c c. of serum injected This fluid showed meningococci by smear but not by culture and Fehling's solution was not reduced March 26, the temperature was normal, but punctures were repeated and serum was given on that and the following day, the fluid in both instances was sterile, and on the 27th reduced Fehling s solution The patient continued to improve until the 30th when the temperature rose to 102.2, and there was severe headache Fifty c c of cloudy fluid were withdrawn and 20 c c of serum given This fluid was sterile, Fehling's solution was slightly reduced The punctures were repeated March 31 and April 1, 2 and 3, the fluid of April 1, only, showing meningococci, that of April 3 gave a good reduction of Fehling's solution The temperature was normal, April 2, the patient continued to improve until April 12, when he had a second relapse, the temperature was 101.5, he had a severe headache, lumbar puncture yielded 60 c c of cloudy fluid, 20 c c of serum were given This fluid showed extracellular and intracellular meningococci, but the culture was sterile, Fehling's solution was not reduced By this time the family was quite worn out by the care of the patient and he was taken to the Post-Graduate Hospital, where he recovered under serum treatment from the second relapse and has been well ever since A second relapse is very unusual

Case 3—W R, aged 13 years, seen July 26, had been taken sick July 24, the symptoms were characteristic, there was herpes on the lips, and the patient was delirious Fifty c c of cloudy fluid were withdrawn, showing meningococci by smear and culture, Fehling's solution was not reduced; 20 c c of serum were given Lumbar punctures were done daily until August 6, except July 30, August 3 and August 5, when improvement clinically and in the fluid had seemed to warrant their omission At no time, however, had the temperature been normal or the patient s general condition very encouraging August 6, the patient suffered considerably from shock at the time of puncture, and no more punctures were attempted until the 12th At this time the patient was greatly emaciated, the head was retracted and swallowing was almost impossible, the temperature was 104, 50 c c of turbid fluid were withdrawn and 10 c c of serum injected without untoward symptoms A small quantity was given on account of the shock at the previous injection This fluid showed meningococci by smear and culture, and no reduction of Fehling s solution, punctures were repeated, August 13, 14, 15, 16, 17, 19 and 21, no serum being given at the last puncture Seventeen punctures were done There were no organisms after August 15, and there was a good reduction of Fehling's solution after the 16th An autogenous vaccine was given, August 13, 17 and 21, in doses of 250, 500 and 750 million

COMMENT

Autogenous vaccines have not been used in a sufficient number of cases to show their value definitely However, it is the custom of the department to use them in cases that tend to become chronic and in a number of instances they seem to have been beneficial In Case 2, vaccine was not used, as both the first attack and the relapse cleared up promptly It has been the experience of the department that doses of serum larger than 20 c c need to be given with extreme caution, even though very large amounts of fluid are withdrawn It is to be remembered that relief of pressure is in itself of considerable therapeutic value Untoward effects from the withdrawal of large quantities of fluid have never been observed Of course, the punctures are always with the patient lying down The serum treatment should be continued until the fluid has been sterile for two or three days and until the patient clinically is much improved In Case 1, for instance, no cultures grew during the relapse, but eleven punctures were done, followed in all cases but the last one or two by the administration of serum

It will have been noticed in the case reports that considerable prognostic importance is attached to the reduction of Fehling's solution This has already been referred to by DuBois and Neal[1]

A more extended study of this point is now being made In addition to the specific serum and vaccine treatment, in which one must be guided by experience, the general treatment is of great importance Hexamethylenamin is given as a routine It may or it may not be excreted as formaldehyd in the spinal fluid It certainly tends to prevent cystitis if retention develops, as it often does Sedatives must be used if the patient is delirious or restless, preferably some preparation of opium, as it has a less depressing effect on the heart than other sedatives The eyes, mouth, skin, bladder and bowels must all receive careful attention Most important of all is the feeding In many instances swallowing is very difficult on account of the retraction of the head, and the greatest patience must be exercised to induce the patient to take even a little nourishment Feeding by rectum was resorted to for a while in Case 1 It is not, however, the object of this paper to cover fully the treatment of meningitis Our experience in that direction has been dealt with more in detail in the summary mentioned[1] The necessity of prolonged administration of the serum, did, however, seem worth emphasizing

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[1] DuBois, Phebe L, and Neal, Josephine, B Summary of Four Years of Clinical and Bacteriologic Experience with Meningitis in New York City, Am Jour Dis Child, January, 1915, p 1, Streptococcus Meningitis with Report of Cured Case, Arch Pediat, January, 1915

Adulteration of Oysters—Inspectors of the Department of Agriculture have found that it has been the custom of some dealers in oysters to fatten them by soaking them in fresh water Oysters will not take up sufficient of the salt water in which they grow greatly to increase their bulk but will drink fresh water or water that is slightly salted This practice obtains with oysters in the shell as well as those shucked The practice lowers their food value and, according to the department, is an adulteration under Section 7 of the Food and Drugs Act According to *Commerce Reports*, the Oysters Growers' and Dealers' Association of North America is cooperating with the Department of Agriculture in stopping interstate traffic in oysters adulterated in this manner

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DYED FUR (PARAPHENYLENDIAMIN) DERMATITIS

WITH REPORT OF FIVE CASES

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MINNEAPOLIS

The present extensive use of dyed fur, especially of fur collars which come in close contact with the sensitive skin of the face and neck, has caused many cases of acute painful dermatitis Although arsenic used in preparing fur may occasionally cause a dermatitis, practically all the cases are caused by the wearing of brown or black furs dyed with paraphenylendiamin This dye is an anilin derivative with the formula $C_6H_4(NH_2)_2$ and is sold under such trade names as paramine, ursol, etc Paraphenylendiamin is an allied and homologous compound of anilin black, and is oxidized by hydrogen peroxid and other chemical substances to form Bandrowski's base The intermediate product of oxidation is chinondichlordiimin, which is very irritating and is the cause of dermatitis from dyed fur Where oxidation is complete, paraphenylendiamin is not irritating, and this probably explains why the brown fur is more irritating than the black The danger of dermatitis is also lessened by careful washing of the fur after it has been dyed

The furs which cause this dermatitis are especially the brown fur collars worn by men, and the black pony coats worn by women The deeper part of the hairs in the fur shows a very characteristic, artificial appearing brick red color, even though the fur may superficially appear to have a natural brown color The pony coats usually show at some point the same brick red color, although, as the hairs are short, they usually are dyed a uniform dark black

SYMPTOMS

Usually the skin of the "collar area" of the neck is affected Occasionally the hands are involved, and in rare instances the dermatitis may extend widely over the body The first symptom noticed is itching and burning Following this, in typical cases, there is a marked redness of the skin, accompanied by some swelling or edema, and intense itching and burning A rather dry, scaly, scarlatiniform dermatitis is the rule Occasionally flat vesicles with oozing surfaces are present, but well marked vesicles and pustules, such as are found in poison ivy dermatitis, are absent The severity of the symptoms varies from a small, red, itchy patch, which causes a slight degree of annoyance, to a very severe dermatitis, in which the itching and burning may be sufficient to prevent sleep In the milder or more chronic cases, there is often formed eczema-like plaques and flat papules Absorption of large amounts of the dye from the skin may occasion serious internal trouble, as diarrhea, vertigo, albuminuria, etc

Many persons are not susceptible to this dye, and develop no symptoms even though the dye from the fur is rubbed off and blackens the skin to a noticeable extent Some persons are not ordinarily troubled by wearing these dyed furs, but an acute outbreak may follow, provided the skin happens to be especially sensitive, as after a close shave, or if moisture comes in contact with the fur, as from melted snow, or in extreme cold weather from precipitation of the moisture in the breath In other words, any factor causing the fur to become damp increases very materially the toxic properties of the dye The fact that certain persons are not affected for some time, even months, after wearing the fur in question, has been explained on the ground of anaphylaxis,[1] or of a gradually acquired susceptibility, or of a cumulative effect [2] This I believe to be erroneous, and the apparent cases of a gradually acquired susceptibility are probably due to accidental causes, such as allowing the fur to become moist, etc

DIAGNOSIS

Cases of dyed fur dermatitis are now so frequent that in all cases of acute eczema or artificial dermatitis, this condition should be thought of In diagnosis, the localization is important An acute dermatitis of the "collar area" of the neck, including the lobes but not the upper part of the ears, is suggestive If the patient wears furs, these should be examined for the characteristic brick red color in the deeper part of the fur All black pony coats are evidently dyed with paraphenylendiamin In cases of doubt, the fur should not be worn for a short time, and the eruption, if due to dyed fur, will disappear shortly under simple treatment

PROPHYLAXIS AND LEGAL ASPECT

Such a large percentage of persons, under certain circumstances, are susceptible to poisoning from furs dyed with paraphenylendiamin, that I believe the use of this dye should be prohibited by law This dye is also used to dye woolens, silk hose, and as a hair dye Dermatitis also occurs in these cases The supreme court[3] of Michigan holds that it is a question for the jury whether or not a wholesaler of furs is responsible for damages, when cases of dyed fur dermatitis occur, especially when these dyed furs are not labeled or the purchaser warned in any way that the dyed fur may give rise to serious skin trouble Many persons buy and wear the dyed furs for a sufficient time to have confidence in them, and when finally an acute dermatitis occurs, the connection between the dermatitis and the wearing of the dyed fur is not thought of If the selling of furs dyed with this substance is not prohibited, there should at least be a label attached stating that paraphenylendiamin has been used

TREATMENT

The wearing of the dyed fur must be prohibited, as otherwise treatment is unsatisfactory Simple protectant treatment, as soft zinc paste, calamine lotion, etc, is all that is needed Theoretically sodium bicarbonate should be of value, as it oxidizes the irritant substance chinondichlordiimin to Bandrowski's base, which is nonirritating

REPORT OF CASES

During the present winter I have seen five patients, all adults, with dyed fur dermatitis due to paraphenylendiamin

Case 1—A man who wore an overcoat with a fur collar had rather mild symptoms, itching, burning, and redness of the neck, which recurred a number of times last winter He has been well since getting rid of the fur collar

Case 2—A man wore an overcoat with a fur collar last winter with but little trouble This fall, following a shave at a barber shop, he wore the overcoat for the first time this year The weather was quite cold, so that the collar was turned up and came into close contact with the skin of the face and neck A severe dermatitis followed, which he thought was the barber's itch and treated with phenol (carbolic acid) and other antiseptics Severe inflammation developed so that he was unable to sleep for one or two nights He was then referred to me, and was found to have an acute, swollen scarlatiniform dermatitis of the neck, face and lobes of the ears Under appropriate measures the patient made a prompt recovery

Case 3—A woman had worn a coat with a fur collar for several years, and had noticed some itching and irritation about the neck from it, and had consequently always worn a muffler, thus protecting the skin of the neck A few weeks ago a red patch about the size of a dollar was noticed on the right cheek This caused some trouble from itching Moderate swelling was present When the coat was put on and the collar turned up, it was seen to come in contact with the skin of the face at this point The patient obtained a new coat, and the condition disappeared very rapidly

Case 4—This patient purchased the coat this winter and had a rather subacute form of the dermatitis, located on the back of the neck, where the collar came into close contact with the skin A large eczemalike plaque with three large flat papules was present Itching was very marked, accompanied by some burning The coat was worn for some time after this, an attempt being made to keep the fur from coming into contact with the skin Recovery was slow, but immediate improvement followed when the coat was entirely given up and natural brown furs used

Case 5—A woman with a black pony coat had the typical rash on the neck, hands and forearms

636 Syndicate Building

ALARMING SYMPTOMS CAUSED BY DIARSENOL

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Diarsenol is made by the Synthetic Drug Company of Toronto, Canada, it is said to be the dichlorhydrate of dioxydiamidoarsenobenzol, although this is not stated in the literature accompanying the drug It is a yellow powder put up in a sealed glass ampule, and dissolves readily in 50 c c of water A yellow precipitate forms on the addition of a solution of sodium hydroxid to a watery solution of the drug, and clears on further addition of sodium hydroxid My impression is that it takes less sodium hydroxid to precipitate and clear a solution of diarsenol than it does a solution of salvarsan

The literature accompanying diarsenol states that on the approval of the commissioner of patents, arrangements have been made with Professors J J MacKenzie and A P McPhedran, both of the University of Toronto, to send out only diarsenol which has been tested biologically in the laboratories of the University of Toronto, under their supervision The indications, contraindications, dose and technic of administration advised by the manufacturers is the same as that recommended for salvarsan

Fourteen intravenous injections of diarsenol have been administered by me Eleven consecutive doses were without untoward effect or phenomena differing from those attending the intravenous administration of salvarsan In these cases the therapeutic result, as far as I am capable of judging in this short time, has been as good as that obtained by the use of the original drug Not until the twelfth dose was administered did I encounter trouble

In all the cases in which I administered diarsenol, the same preparatory measures and technic were employed as in the administration of salvarsan On the day prior to the operation the diet was restricted, directions given for a full glass of water to be taken every two hours, and a saline purge ordered at bedtime After retiring no food or water, except two glasses of milk at 10 a m on the day of administration, was permitted until after the dose had been taken

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[1] Bunch J L. Brit Dermat Jour September, 1915
[2] Blaschko C. Deutsch med Wchnschr Dec. 4 1913
[3] Liability of Vendors of Dyed Furs for Injuries to Health Medicolegal The Journal A. M A. Feb 14 1914 p 562

The technic of administration was as follows All apparatus was thoroughly sterilized Six-tenths gm of diarsenol was dissolved in 50 c c of freshly redistilled and sterilized water, to which was added, drop by drop, a 15 per cent sodium hydroxid solution, until a yellow precipitate formed and cleared by further addition of the sodium hydroxid Extreme *precaution was used to have the solution perfectly* clear, and yet use no more sodium hydroxid than necessary To this solution 200 c c of 0 9 per cent salt solution was added Boehm's apparatus was used, and the needle introduced into the vein without incision

The phenomena encountered following the intravenous administration of diarsenol in the cases herein *described have never been observed by me following* the intravenous administration of salvarsan or neosalvarsan

Case 1—Man, aged 32, weight 132 pounds, presented himself Dec 8, 1915 A chancre had appeared in October, 1915, followed by secondaries Examination disclosed an indurated mass at the site of the chancre, a macular syphilid over the trunk numerous mucous patches and inflamed tonsils Slight ptyalism resulted from two inunctions of mercury administered at his home town The diagnosis was so clear that the Wassermann reaction was dispensed with General physical and laboratory examination was negative

Treatment—A hot bath followed by inunction of one-fourth ounce of 50 per cent mercurial ointment was given daily until Jan 25, 1916 Eleven ounces of the ointment were used, and at no time were signs of mercurialism observed

All evidences of the disease had disappeared except the glandular enlargement and induration at the site of the chancre, on this account an intravenous injection of diarsenol was advised Complete freedom from treatment was ordered until February 3, when the routine preparatory measures for the administration of the drug were ordered A thorough physical and laboratory examination was made with negative results

At 3 p m, February 4, the intravenous administration of 0 6 gm of diarsenol, following the technic described, was begun When about 175 c c had been injected the patient complained of a tingling sensation of the extremities and tongue, his face was flushed, pulsation of the arteries of the neck was easily seen, and the pulse was rapid, full and bounding This was first thought to be psychic, but as the pulse became more rapid and weaker and the respiration rapid and shallow the administration was discontinued, leaving about 50 c c of the solution in the container The pulse continued to grow more rapid and weaker, the respiration more rapid and shallow, the face very red and swollen Vomiting ensued, followed by loss of consciousness, the pupils were dilated, the radial pulse was not palpable, only one sound of the heart was discernible, respiration was not apparent, there was a drenching sweat, and the face was still swollen but colorless

At this juncture two hypodermic injections of 1/16 grain of strychnin sulphate, one of 1/75 grain of atropin sulphate and one of 1/100 grain digitalin were administered Shortly the radial pulse became palpable, respiration discernible, the sweating ceased, color returned to the face, and consciousness was regained A severe burning pain in the ball of the left foot was complained of Gradually a normal condition ensued, except for the pain in the foot, swollen face and a feeling of severe exhaustion The patient was assisted from the room at 5 15

February 5, the face was slightly swollen, the urine contained albumin and hyaline and granular casts, and the patient complained of extreme weakness

February 6, the face was normal, the urine condition was unchanged, and the patient was feeling much better The indurated mass at the site of the chancre was entirely gone

February 22, the urine still contained albumin and hyaline and granular casts

Case 2—Woman, aged 39, weight 209 pounds, mistress of brothel, presented herself, Jan 2, 1916 There was no history of syphilis There was general granular enlargement The Wassermann reaction was + + + + A bath and mercurial inunction were administered daily until January 23 Salvarsan was advised All treatment was discontinued and an intravenous injection of 0 6 gm of salvarsan was administered January 30 There was no reaction or unusual phenomena

As I was unable to obtain salvarsan, an intravenous injection of 0 6 gm of diarsenol was administered, after the usual preparation, February 5, at 3 p m

After about half of the dose had been given, the patient complained of a burning of the tongue and pins sticking in the lower extremities, the pulse became full and fast, the face red and puffed The administration was discontinued, 160 c c of the diarsenol solution had been given The pulse became more rapid and weaker, and the face colorless Nausea then developed, but no vomiting, there was slight sweating, the pulse was very weak and rapid, and respiration increased in frequency No restoratives were administered Gradually the pulse became stronger, and color returned to the face At 4 p m the patient left the room in an apparently normal condition, except a slight puffing under the eyes and slight thickening of the lips

February 6, the patient was feeling well, the urine was negative

Case 3—Man, aged 37, weight 129, had had syphilis ten years He had been under my care four years, with no treatment for five months He had taken nine intravenous injections of salvarsan and neosalvarsan since 1911 Physical and laboratory examination was negative

Intravenous injection of 0 6 gm diarsenol was given January 24, with no untoward symptoms or phenomena differing from those following an intravenous injection of salvarsan

February 6, at 4 p m, after a negative physical and laboratory examination and preparation according to outline, another intravenous injection of 0 6 gm of diarsenol was administered

After the entire dose had been given and the needle withdrawn, a tingling sensation over the entire body was complained of, the face became red and puffed, arterial and precordial pulsation were visible, respiration was rapid, the pulse was rapid, full and bounding Vomiting followed, the face became colorless but still swollen, and vomiting was profuse, of a yellow frothy character Consciousness was lost, the pupils were widely dilated, the radial pulse was *not* palpable, respiration not discernible and sweating was profuse Only one feeble heart sound could be heard Soon the radial pulse was felt, and a normal condition rapidly ensued, except that the face was so swollen that the features could hardly be recognized, the eyes were closed and speech was impossible At 8 p m the patient left the room feeling fairly comfortable

February 7, he felt weak, the face was still slightly swollen, the urine contained albumin and casts

February 9, the patient felt very good, and the swelling of the face had gone Albumin and casts persisted

February 22, albumin and casts persisted

An attempt to explain the phenomena would be a reckless guess, but the strongest possibilities presenting themselves to my mind are

1 A chemical poison, acting direct, or through the suprarenals, on the vasomotor center

2 Shock, either (*a*) surgical or (*b*) anaphylactic

I am inclined to the first explanation (chemical poison)

ARSENOBENZOL IN THE TREATMENT OF SYPHILIS

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AND

JAMES HERBERT MITCHELL, M D
Hyde Memorial Fund Research Fellow, Rush Medical College

CHICAGO

Arsenobenzol is an arsenic compound presented to the medical profession by Dr Jay F Schamberg[1] and his associates, Drs G W Raiziss and John A Kolmer, from the Dermatological Research Laboratories of the Philadelphia Polyclinic for the treatment of syphilis

The first injection was given by us, Nov 13, 1915 In a series of 184 injections given to seventy-five patients suffering with syphilis in its various stages, we believe some conclusions as to the value of this remedy can be drawn Its action has been uniform, its toxicity low, and its therapeutic results have been excellent The immediate reactions have been almost negligible, and remote untoward results entirely absent We have employed it in both early and late cases, including those with primary lesions before eruptive manifestations have occurred, in the so-called secondary and tertiary stages, also in latent cases, and those involving the cerebrospinal system

The drug as furnished to us has been in ampules containing 0 4 gm each We have administered it in dosage of from 0 1 to 0 5 gm The average amount given by us thus far has been 0 4 gm It is a yellowish powder, which goes into an acid solution in boiling-hot water without oxidation This acid solution must be neutralized before being injected

The technic employed by us for the administration of arsenobenzol intravenously is as follows

For an average dose of 0 4 gm, 50 c c of boiling-hot water, which has been redistilled on the same day, is poured into a mixing cylinder of a capacity of 250 c c The drug is then sprinkled on the surface of the water, after which the glass stopper is inserted and the flask vigorously shaken The average time required for complete solution is about two minutes After making sure that no gelatinous particle remains, a solution of sodium hydroxid of 15 per cent strength is added, drop by drop, from a pipet At first, a cloudy precipitate forms, but on further addition of the sodium hydroxid solution (usually about 15 drops in all), the arsenobenzol goes into a perfectly clear, canary-yellow solution

A small pledget of sterile cotton is now inserted into a sterile funnel, boiling-hot water poured over it to clear it of small particles, and the solution is filtered through it into a sterile graduate, and cold water, which has been previously redistilled and boiled, is added until the solution measures 100 c c It is now ready for injection

The apparatus used by us for injection (Fig 1) consists of a percolator of the Oldberg type, made by Whital, Tatum & Co, fitted with a perforated rubber stopper connected with pure gum, thick-walled tubing about 2 feet long Just back of the connection with the needle is a glass tube, serving as a window for the observation of the blood which flows into the tube when the needle is inserted into the vein

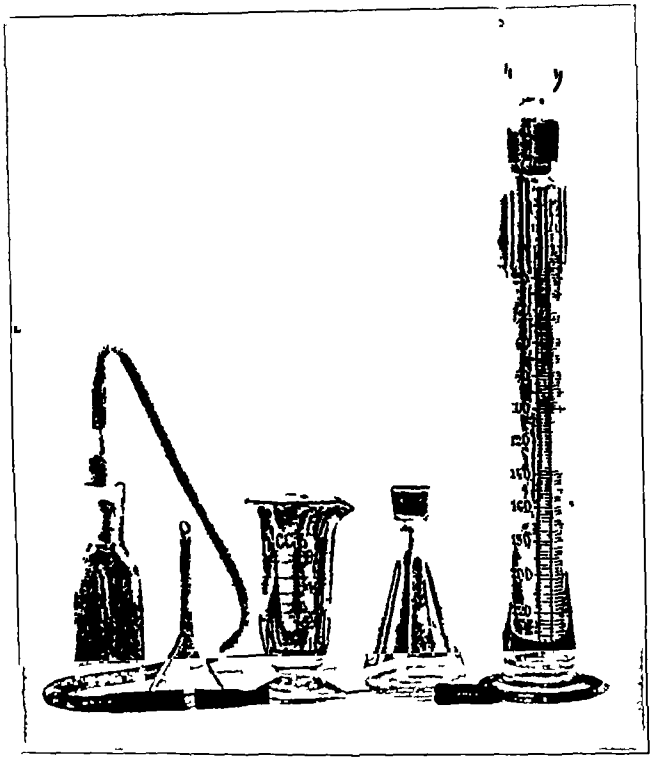

Fig 1 —Apparatus used for injection of arsenobenzol The percolator with rubber tubing attached is on the extreme left and the mixing cylinder on the extreme right

A small amount of distilled water is poured into the percolator, the tube freed from air, and the needle attached and then inserted into the vein, which has been previously distended by means of a constrictor When the operator is assured that the rate of the flow is satisfactory and that there is no subcutaneous infiltration, the solution is poured into the percolator and allowed to run slowly into the vein Large needles and concentrated solutions of arsenobenzol should be avoided

Of the seventy-five patients treated with arsenobenzol, eight had primary lesions, six had primary and secondary lesions, thirty-one had late manifestations or latent syphilis, twenty-eight had lesions limited to the central nervous system, and two had diseases other than syphilis, one being blastomycosis and the other vulvovaginitis

Most of the patients were given mercury in addition to the arsenobenzol, but fifteen patients have had either no medication other than arsenobenzol, or none for periods varying from a few months to several years Of these, there were three with primary lesions which healed within one week after an injection of from 0 2 to 0 3 gm, one primary with marked secondary manifestations (Case 1, Fig 2) which healed promptly with 0 2 gm, one arthritis, with immediate cessation of symptoms after internal mixed treatment had failed, one case of ulcerative and gummatous lesions of the thigh (Case 2, Fig 3) with prompt healing, one case of squamous palmar syphiloderm, which yielded quickly, and five cases of nervous system lesions, all of which improved

Three patients who have syphilis complicated with diseases ordinarily considered as contraindications for intravenous arsenic medication were given from one to four injections. In no case was there any noticeable reaction. One of these patients has a chronic nephritis and cystitis, one diabetes mellitus, and one aortic insufficiency. All have improved under the treatment.

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[1] General News The Journal A. M A, Dec. 18, 1915 p 2179

Two patients have been given three intraspinal injections of autogenous serum, a modified Swift-Ellis technic being used. No pain resulted from two of the injections, but the second injection given to one of the patients gave rise to a slight discomfort during the night.

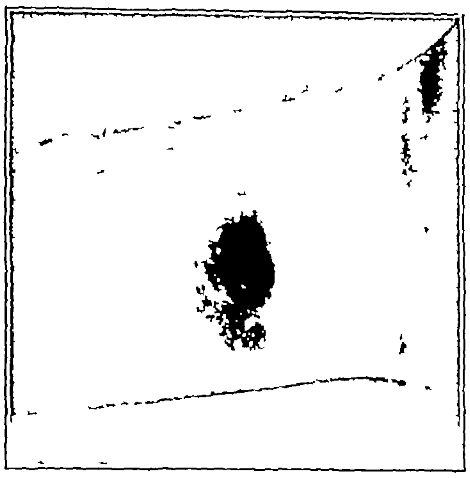

Fig. 2 (Case 1).—Extragenital lesion, with marked secondary manifestations, duration, ten weeks. 0.2 gm. arsenobenzol administered, Dec. 31, 1915. Marked reaction followed and continued for twenty-four hours. Patient was seen, Jan. 12, 1916, lesion had healed and symptoms subsided, no other treatment during the interim.

Following the 184 injections, reactions were observed in ten patients. Of these, six may be classed as "doubtful," and amounted to nothing more than "a queer feeling," or to a sensation described as "slightly upset." One patient became flushed and complained of "a feeling of fulness," which passed away within twenty minutes after the injection.

The remaining four patients suffered reactions classed as "definite." Of these, one patient (Case 1, Fig. 2), who had had an unrecognized extragenital lesion for three months and was extremely toxic, became nauseated, vomited, and suffered from an exaggeration of all his symptoms for twenty-four hours following the first injection. No reaction, however, occurred after the subsequent injections. Two patients were free from any noticeable symptoms after the first and second injections, but were nauseated, and vomited at least once, after the third injection, and one patient, who had had no reaction after the first injection, was nauseated after both the second and third. As yet no intramuscular injection of arsenobenzol has been administered by us, but there appears to be no reason why it should not be given in that manner, if desired.

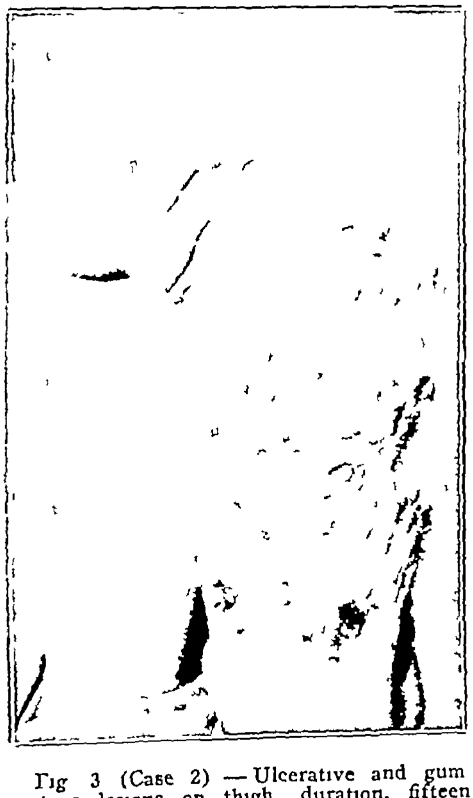

Fig. 3 (Case 2).—Ulcerative and gummatous lesions on thigh, duration, fifteen years. 0.2 gm. arsenobenzol administered, Jan. 12, 1916. By January 20 the lesions were healed, no other treatment in the interim.

CONCLUSIONS

Arsenobenzol, together with mercury, offers as good a method of treatment of syphilis as any heretofore used.

In its uniform and nontoxic action, arsenobenzol commends itself as a remedial agent of great value in the treatment of syphilis, and its successful preparation marks an achievement in American chemotherapy.

While a sufficient experience has not as yet been had from which to draw ultimate conclusions, we believe its therapeutic accomplishments, together with its safety of administration, recommend its continued employment.

RETARDED OSSIFICATION AS AN ETIOLOGIC FACTOR IN TRAUMATIC ARTHRITIS AND EPIPHYSITIS

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The ossification of bone, in the normal process of development from birth to adolesence, gives characteristic roentgenologic appearances to the joints at different ages. For various reasons, ossification may be retarded or accelerated, and the appearance of the joint will be changed accordingly.

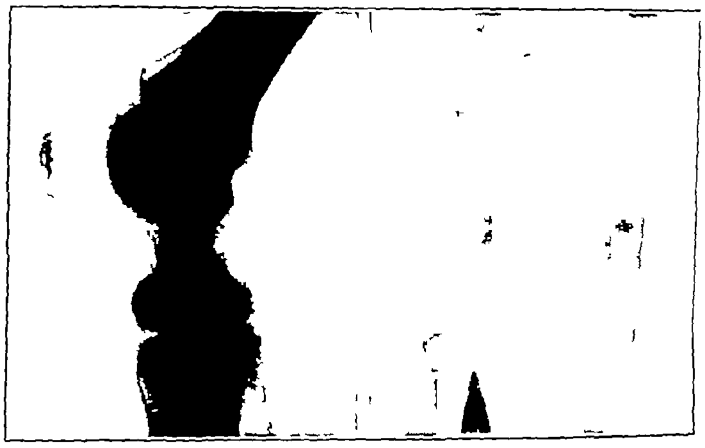

Fig. 1.—On left, lateral view of knee joint in Case 2. Appearance practically the same as in Case 1. Note small size and irregular ossification of patella. On right, anteroposterior view of knee joint in Case 2. Appearance practically the same as in Case 1. Note irregular ossification of the outer side of the epiphysis of the femur and tibia.

In an analysis of about 1,000 cases made in the Roentgen department of the Children's Hospital in Boston, the late Dr. Thomas M. Rotch was able to arrange a classification of the roentgenologic appearance of the wrist joint at different ages for normal children, the results corresponded closely to those of the earlier work of Pryor. Dr. Rotch found that the normal changes which take place in the bones of the wrist correspond so closely to those of the other joints that, in the great majority of individuals, the wrist may be accepted as a fairly correct index of general development, he also found that the normal process of ossification, as shown by the wrists, was frequently retarded and, in connection with such cases, he called attention to the danger of strain, but, so far as I know, gave no specific illustrations.

I have had the opportunity of observing three cases in which retarded ossification seemed to be the chief etiologic factor in the production of traumatic arthritis or epiphysis.

CASE 1.—A boy, aged 7 years and 8 months, complained of a painful swelling of the left knee and ankle. Family history was negative. The patient had always been very active and always well with the exception that during the past year there had been transitory swellings in joints other than those now affected. The present illness began suddenly several days before with pain and swelling in the left knee and ankle. There was no pain when the patient kept quiet, but walking was painful and caused increased swelling.

The patient was well nourished, and his skin and mucous membranes were of a good color. Examination of the heart, lungs and abdomen was negative. The joints, with the exception of the left knee and ankle, appeared to be normal. The left knee was swollen but not reddened; on palpation it was slightly tender, fluctuated and evidently contained fluid. The left leg could not be fully extended or flexed without causing pain. Muscle spasm was present. The left ankle joint presented practically the same condition as the knee. The temperature was elevated about a degree, and the pulse rate was a little over 100. Urine examination was negative.

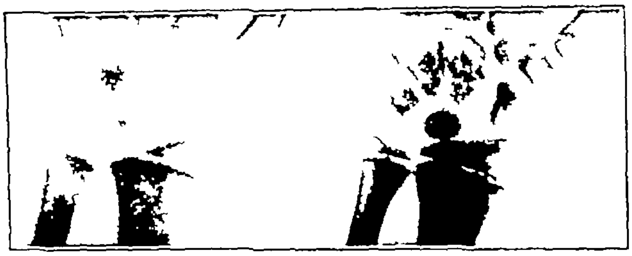

Fig. 2.—On left, wrist joint in Case 1: boy, aged 7 years and 8 months. Ossification development corresponds to that of a child about 4 years old. On right, normal wrist joint for a boy the age of the patient.

The patient was given moderate doses of acetylsalicylic acid (aspirin) and told to report in a few days. A week later the condition was practically unchanged. A roentgenogram was taken of the left knee, and the general appearance of the joint was found to correspond to that of a child several years younger; in addition, there was present an irregular ossification of the patella and marked roughening with irregular bony deposits on the outer side of the epiphysis of the femur and tibia (Fig. 1).

The von Pirquet test was negative.

The case presented such unusual features that the patient was sent into the Albany Hospital for observation. In the hospital the boy was kept in bed, and within twenty-four hours all the tenderness and swelling had disappeared from the left knee and ankle. The temperature, which was slightly elevated on admission, dropped to normal in a few hours. The subcutaneous tuberculin test was negative, as was also the Wassermann test.

The peculiar roentgenographic findings in the affected knee suggested the advisability of examining other joints with the Roentgen ray. The right knee was found to have practically the same appearance as the left, and a roentgenogram of the wrist joints showed that the boy's ossification development was retarded about three to four years (Fig. 2).

The diagnosis of traumatic arthritis and epiphysitis associated with retarded ossification was made, and the parents were advised to keep the boy quiet and not let him play so actively with boys of his own age. Syrup of ferrous iodid was advised as a tonic.

The boy was seen and examined again six months later. He had had one or two slight attacks of his old trouble in the left knee, but at the time of the examination there was no evidence of arthritis anywhere.

I have recently seen and examined the boy again, nearly two years since the original examination. He has been free from arthritis with the exception of an attack in the instep four or five weeks ago. This attack kept him from school two or three days. He has to take a long walk to school and plays vigorously with boys of his own age, from 10 to 11. His mother says he gets very tired and does not sleep well at night, but always recovers quickly when he rests. Roentgenograms at present show that the irregular ossification in the patella and epiphysis of the tibia has disappeared, but the general ossification development, as shown by the wrists, is still retarded from two to three years.

CASE 2.—A boy, aged 7 years and 10 months, complained of pain and swelling in the left knee and right ankle. He was referred to me for Roentgen-ray diagnosis, and I am indebted to his attending physician for the history. The family history was negative. The boy never seemed strong for his weight and age, but always very active. Otherwise the past history was negative. The present illness began about a year and a half ago with pain and swelling in the knee. The condition present at that time was so strongly suggestive of tuberculosis that the patient had been treated by a plaster-of-Paris cast.

A roentgenogram of the left knee was taken with the idea of showing the location and extent of the tuberculous process. No evidence of any tuberculous process was found, however, but the appearance of the joint (Fig. 1) was so similar to that in Case 1 that a common cause was suspected. A roentgenogram of the wrist joints was taken, and ossification was found to be retarded about four years.

The diagnosis of traumatic arthritis and epiphysitis associated with retarded ossification was made, the activities of the boy were restricted, and the arthritis cleared up.

I was able to examine this patient nine months later. At that time there was no external evidence of arthritis, but roentgenograms showed that there was still some irregular ossification in the knee joint, and that ossification was still retarded about four years.

CASE 3.—A boy, aged 10, complained of pain in the right heel. The family history was negative. The boy had always been well but rather pale and delicate looking. He had sprained the right ankle two years before, and thought that the foot had never been right since. He had had pain in the right heel for the past two weeks. He would wake up in the night crying with pain in the heel. The patient's mother said that the heel throbbed at such times. Walking was painful.

The heel was tender to the touch near the insertion of the Achilles tendon. The von Pirquet test was negative. A roentgenogram of the ankle was negative except that the epiphysis of the os calcis was not so well developed as it should be in a boy 10 years old (Fig. 3). A roentgenogram of the wrist joints showed that the ossification development was delayed between two and four years.

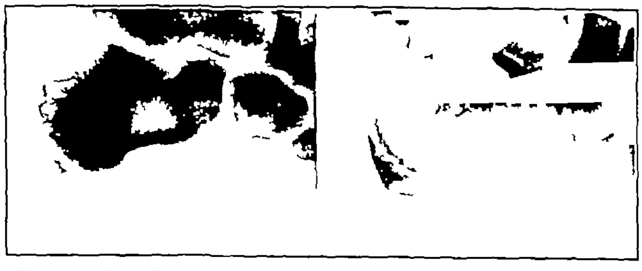

Fig. 3.—On left, small and irregular ossification of the epiphysis of the os calcis in Case 3: a boy aged 10. On right, ossification in the epiphysis of the os calcis in a girl aged 10.

The symptoms rapidly cleared up under adhesive strapping applied to the heel, and restricted activity.

The cases show that retarded ossification may be an etiologic factor in the production of traumatic arthritis and epiphysitis in children. The trauma, in such cases, consists in overstrain of the joints due to abnormal activity. The child may be leading the normal active life of a child of his own age, but anatomically he belongs to a type several years younger and, to avoid strain, his activities should be correspondingly restricted. Cases of this character are probably quite common, and are very apt to be overlooked or wrongly diagnosed.

THE STANDARDIZATION OF DIGITALIS AND THE POTENCY OF AMERICAN-GROWN DIGITALIS *

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AND
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This study was undertaken by us, at the suggestion of Dr Janeway, in the endeavor to insure digitalis preparations of maximum and known effectiveness for use in the wards These desiderata are so rarely fulfilled in any hospital that the results we have obtained seem worthy of a brief report

METHODS OF STANDARDIZATION

Two methods of biologically standardizing digitalis preparations are commonly employed the so-called "frog" method, and the so-called "cat" method After a number of preliminary experiments it was found that the frog method was less reliable for the standardization of the infusion than the cat method[1] the latter method was therefore exclusively employed in this work The technic followed by us was suggested by Hatcher and Brody,[2] and is somewhat similar to that described by them, and consisted in determining the minimal fatal dose per kilogram weight of cat, the drug being injected slowly into the femoral vein Our procedure was briefly as follows

A healthy cat was anesthetized with ether, and a cannula inserted into a femoral vein, subsequently a minimum amount of ether being administered, just sufficient to keep the animal quiet Ten c c of the infusion of digitalis were slowly injected into the vein in the course of five minutes, and thereafter 1 c c every two minutes until the death of the animal The total amount of the drug injected divided by the weight of the animal gave the strength of the preparation in terms of so-called "cat units" The following protocol will serve as an illustration

Experiment, April 30, 1915 Cat weighing 2 6 kg Cannula in left femoral vein, light ether anesthesia

3 20 p m experiment begins Pulse 160 per min

Slow injection of infusion digitalis

3 25	Finished injection of 10 c c	Pulse 140 per minute
3 27	Injected 1 c c	Pulse 120
3 29	Injected 1 c c	Pulse 100
3 31	Injected 1 c c	Pulse 72 respirations rapid
3 33	Injected 1 c c	Pulse 72 vomits
3 35	Injected 1 c c	Pulse 72
3 37	Injected 1 c c	Pulse 60
3 39	Injected 1 c c	Pulse 148
3 41	Injected 1 c c	Pulse 160
3 43	Injected 1 c c	Pulse 160
3 45	Injected 1 c c	Pulse 180
3 47	Injected 1 c c	Pulse 168
3 49	Injected 1 c c	Pulse 240
3 51	Injected 1 c c	Pulse 240
3 53	Injected 1 c c	Pulse 240
3 55	Injected 1 c c	Pulse irregular, very rapid
3 57	Injected 1 c c	Pulse irregular, very rapid
3 59	Injected 1 c c	Pulse dead heart in systole

Total amount of infusion = 26 c c

$$\text{Therefore lethal dose} = \frac{26}{2\ 6} = 10 \text{ c c per kg}$$

By this method different infusions of digitalis prepared from two batches of Allen's English leaves were assayed the one from the stock of the pharmacy of the Johns Hopkins Hospital, the other an infusion procured from a well-known pharmacy in New York The lethal dose of the former was found to be 13 5 c c per kilogram, that of the latter, 7 5 c c per kilogram This difference in potency could be accounted for only in two ways either by differences in the method of preparation or by variations in the intrinsic quality of the leaves

DIFFERENCES IN POTENCY DUE TO METHOD OF PREPARATION

A comparison was made between a New York infusion of digitalis and an infusion from the same stock of leaves prepared by our own pharmacist The lethal dose of the New York preparation was 6 6 c c per kilogram The lethal dose of our own infusion from the same leaves was 9 c c per kilogram Four days later the same preparations, having been kept on ice, were restandardized, and gave the lethal doses of 6 8 c c and 9 c c per kilogram, respectively, showing that the preparation did not deteriorate rapidly on standing, a fact which has been pointed out recently by Hatcher

These figures indicated clearly a difference in potency due to the method of preparation The New York technic for preparing the infusion was then ascertained[3] and applied to our own stock of English leaves The lethal dose of this infusion was found to be 11 1 c c per kilogram of cat An infusion made from the same leaves by the method formerly employed by our pharmacist gave a lethal dosage of 13 5 c c

In order to ascertain still further how great a difference in potency of infusions may result from variations in the methods of preparing them, our pharmacist, Dr Wahl, prepared three infusions from the same lot of Allen's English leaves, by slightly different pharmaceutic methods Infusion 1 was prepared according to the U S Pharmacopeia [4] Infusion 2 was made by macerating the leaves with water plus 10 per cent dilute alcohol, instead of adding the alcohol to the finished product as directed in the U S Pharmacopeia Infusion 3 was prepared by macerating the leaves with boiling water in a closed flask, and gently beating the contents of the flask during the whole process of extraction The lethal dose of Infusion 1 was found to be 11 4 c c, that of Infusion 2, 9 5 c c, and that of Infusion 3, 10 6 c c per kilogram weight of cat Thus it will be seen that a considerable variation in the potency of an infusion of digitalis may result from differences in methods of preparation

VARIATIONS DUE TO THE SOURCE OF THE LEAVES

The difference in the potency between the New York infusion and our infusions just described could not be entirely explained by variations in the method of preparation, but were also obviously due to differences in the inherent qualities of the leaves used The next step in the investigation was therefore to assay infusions of digitalis prepared by a uniform method from various lots of digitalis leaves obtained from various sources Great variations in the strength of the products were noted

It was found that an infusion prepared according to the U S Pharmacopeia from our stock of English leaves yielded a product with the lethal dose of 13 5 c c That of an infusion from another lot of English leaves was found to be 9 6 c c, while still another lot of English leaves yielded an infusion, the lethal dose of which was 8 7 c c per kilogram An infusion prepared from some German digitalis leaves found in the hospital pharmacy *proved very inferior in quality*, giving a lethal dose of 19 c c per kilogram weight

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* From the Medical Clinic of the Johns Hopkins Hospital, and Pharmacological Laboratory of the Johns Hopkins University

[1] It is advisable to make three toxicity experiments with each preparation and to take the average As a rule wide variations are not encountered

[2] Hatcher and Brody Am Jour Pharm, 1910, lxxxii, 360

[3] The method of preparing the infusion employed at Johns Hopkins is the official method of the U S P The New York technic differed from this in some details which need not be gone into in this place

[4] Although the U S P gives specific direction for preparing the infusion of digitalis, we have good reason to believe that those directions are not always followed Compare Alpers Jour of Am Pharmaceut Assn, June, 1915, p 715

POTENCY OF AMERICAN LEAVES

It was especially interesting to find that certain American grown digitalis leaves yielded a product of a very high quality Two lots of American leaves were assayed by us One was a supply of Wisconsin leaves kindly presented by Dr George B Roth of the Hygienic Laboratory in Washington The second was obtained from Dr E Kremers of the Pharmaceutical Experiment Station, University of Wisconsin The first yielded an infusion with a lethal dose of 7 6 c c, and the second an infusion with a potency of 7 8 c c per kilogram weight of cat It is evident that both infusions made from the American grown leaves were superior in potency to those made from our stock English and German leaves, and in fact superior to all other leaves assayed by us We have in America, therefore, a digitalis which is unsurpassed Through the kindness of Dr Kremers a supply of Wisconsin leaves was secured and is now being used exclusively in the wards of the Johns Hopkins Hospital

THE MORAL

These investigations strikingly emphasize the need of standardization of digitalis Variations in lethal dose from 6 6 to 19 c c per kilogram weight — approximately 300 per cent — were found in infusions prepared from these various leaves Certainly this is greater than should be tolerated by the profession Yet in all probability still greater variations exist in leaves purchased in the open market

Standardization reveals the strength of the digitalis preparation and permits of graded dosage — more or less — according to the potency of the preparation The physician's duty to his patient does not end with the prescribing of digitalis Plainly it is incumbent on him to secure digitalis effects if the case is a suitable one This is more likely to be accomplished if the potency of the preparation is known

We are also brought face to face with another fact, that the name of this or that firm does not always insure potency or digitalis effect As we have shown, American leaves can be secured which are unsurpassed The answer to the question of potency is to be found in standardization, which is essential to the best treatment

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A NEW HEMORRHOIDAL OPERATION THE SNARE AND BULLET [*]

W F BURROWS, M D
AND
E C BURROWS, M D
NEW YORK

The hemorrhoidal operation here described is simple, rapid, free of danger, suitable for the use of local anesthesia and has been used by us in a series of sixty cases "Pile" operations are notoriously varied The clamp and cautery, clamp and suture, the ligature with or without suturing of the cut mucosa, the Whitehead operation, plastic procedures, submucous excision of the varicosed veins, and injection of irritants into the "pile" mass are favored by different authorities, but during the past year we have discarded other technic for our own In 95 per cent of rectal operations and in all cases of hemorrhoids we use local anesthesia, which is very satisfactory for the method to be described, moreover, with the avoidance of ether or chloroform, the cause of much dread and delay by the patient will be obviated Local anesthesia demands moderate celerity in operating, for, although pain is avoidable, the nervousness of many patients makes prolonged procedures undesirable A good assistant will add much to the ease with which an operation is performed, and the same preparation and aftercare of the patient should be given as would have been demanded had general anesthesia been used

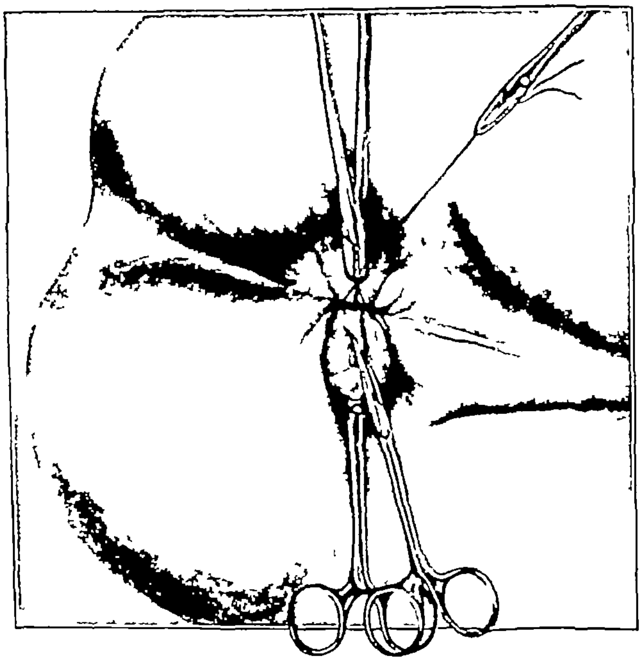

Fig 1 —Method of closing down on loop after which bullet is crushed and hemorrhoid distal to snare cut away

The method advocated by us may be designated "the snare and bullet operation for hemorrhoids" The instruments required are a hypodermic syringe and local anesthetic, half a dozen artery forceps, two pairs of scissors, one pair for cutting the wire, four or five strands of strong pliable wire, both ends of each strand threaded through a perforated lead bullet, and a bullet holder and crusher The operation resembles most the ligature method, but is more thorough, cleaner and more quickly carried out than the latter The pile can be cut away closer to the snare than to the ligature, and the snare and bullet finally lie at a higher level than does the ligature, which the fingers must get into the anal canal to tie, a procedure that is difficult With the ordinary ligature, hemorrhage may follow if it is tied loosely, or polyplike masses may persist as a result of incomplete cutting off of the blood supply of the hemorrhoidal pedicle With the snare and bullet technic, no fear of a slipping ligature exists, and as a consequence of complete removal of the "pile" in the operation of the fire engine and fire hose, minus, however, a very important function, that of anything to represent the all important action of the vasomotors, the dilators and constrictors The hose represents the arterial tree, the tension in the air chamber of the engine at the beginning of each stroke of the pump represents the diastolic pressure, the additional force exerted on the column of water at the end of the stroke of the pump represents the pressure pulse, and the sum total of all pressures exerted at the nozzle represents the systolic pressure It can be readily seen that, while the force of water at the nozzle is all important so far as the fire is concerned, there will be no water to throw on the blaze if, perchance, the compression in the air chamber is inefficient, or the general tone or condition of the hose insufficient to conduct the column of water along to the nozzle and maintain it at the pressure imparted to it by the pumps The important things are, therefore, the state of efficiency of the pumps and the ability of the hose to maintain the column of water at the requisite pressure, the condition of efficiency of the heart and blood vessels The comparison is crude indeed when compared to the wonderful mechanism of the circulatory system, but it will serve to illustrate my meaning when I say that the systolic pressure readings are, as a rule, practically worthless, when not taken in conjunction with the other pressure findings

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[*] Read before the Westchester County Medical Society at St. Joseph's Hospital, Yonkers, N Y, Jan 18 1916

DIASTOLIC PRESSURE

The diastolic pressure, on the other hand, is of the greatest importance, not only as an aid to diagnosis, but also as a prophetic index in arriving at a prognosis To obtain diastolic records of any diagnostic value, it is absolutely essential that several examinations be made under different conditions as to time, environment, emotion, exercise, diet and medication When this is carried out, the average record will give reliable information as to the condition of the vessels, at least beneath the arm band It is well to direct the attention to the fact that the conditions found in the arteries immediately beneath the compression bag are not necessarily or invariably those to be found in other parts of the circulatory system Among causes which might operate to produce different readings in the two arms, for instance, is a possible variation in the size of the vessels or a possible difference in the level at which they lie imbedded in the muscles

The smaller a vessel is, and the greater the distance it lies from the surface, the greater is the compression likely to be required to obliterate it That this is sometimes the case is well illustrated in one of my own patients The diastolic pressure in the right arm invariably registers a full 5 mm more than in the left arm, and being aware of this fact, I always take my readings from the right arm The condition of the vessels beneath the arm band is, as a rule, a reliable index as to the condition of the vessels in general, especially in the young and middle aged, but that it is not always so I have found on several occasions, to my own discomfiture It is not uncommon for persons with apparently soft and pliable radial arteries to suffer a cerebral hemorrhage, and, on the contrary, aged men and women are seen with hard, sclerosed, pipe-stemlike arteries who live to a great age, and die of anything rather than apoplexy It means, of course, that the condition of the circulatory system is not necessarily everywhere the same

A diastolic reading of 100 mm or more usually means that there is a narrowing of the lumen of the vessels, due to a stimulation of the vasomotor constrictors, but I am convinced that it may mean the existence of a true arterial fibrosis I am aware that it is generally agreed that an atheroma causes a reduction in diastolic blood pressure, or, at least, the pressure is increased little, if any On the other hand, I have under my care several patients with arteriosclerosis, of a syphilitic origin, with an abnormally high diastolic pressure The importance of determining the cause of high diastolic pressure is self evident, a hard diseased vessel wall means a serious pathologic condition, while an increase in diastolic pressure, due to increased activity of the vasomotor constrictors, is likely to be functional

How can we distinguish between the causes of high diastolic pressure? The means employed are simple and easy of accomplishment Herein lies one of the reasons for my statement that a single pressure reading is liable to be a source of error Supposing a patient presents himself with a high pressure pulse, with a feeling of oppression in the precordial region, with attacks of dizziness, or a feeling of extreme weakness and lassitude, and possibly dyspnea For example, suppose the patient is a woman whose husband is a victim of an arterial fibrosis, and, in order to extend the example, the husband has been the subject of apoplexy After an ordinary examination, no organic trouble is found, but the sphygmomanometer registers the following blood pressures systolic, 210 mm , diastolic, 105 mm , pressure pulse, 105 mm , and a mean pressure of 152 5 mm Here we have a high systolic pressure, but we also have a high diastolic pressure, and the high systolic pressure cannot be due entirely to an increase of the pressure pulse alone While the pressure pulse of 105 mm is abnormally high, a diastolic pressure of 105 mm makes it at least possible that it is due to the increased labor required of the heart, in propelling the blood stream through a rigid arterial system The conclusion which would naturally be drawn is that an arteriosclerosis exists But suppose that, on the following day, the systolic reading is 180 mm and the diastolic reading is 90 mm , and on the third day it is down to 150 and 80 mm , and that from week to week, the readings vary, first high then low One would, I am sure, change one's ideas about the existence of an arterial fibrosis No true atheroma will flirt with the instrument in any such manner as this Had the first blood pressure examination been depended on, not only would a wrong diagnosis have been made, fraught with dire possibilities to the patient and damaging to one's professional reputation, but also one would have rendered oneself liable to a malpractice suit In this case, the cause of all the symptoms is a spasm of the vasomotor system, due to a stimulation of the constrictors, and the etiologic factors must be traced through the central nervous system to their source That such mistakes occur, and not alone by small town doctors, I have reason to know On the other hand, if the diastolic pressure remains rather constant, with little variation from day to day, except under the influence of powerful vasomotor dilators, such as the nitrites, and, even with them, the variation is not nearly so great, and one is justified in concluding that the vessel walls themselves are the culprits

PRESSURE PULSE

The pressure pulse is so immediately important that life itself depends on it In diseased states of the body, and especially in acute troubles, its value in indicating the course of the disease cannot be overestimated The pressure pulse is the effect rather than the cause, for a failing pressure pulse can be measured, and indicates before other physical signs that the patient is doing badly, or is improving Its value is great in drug therapy, for a high pressure pulse usually contraindicates drugs of the digitalis, strychnin, caffein or camphor class, while a low pressure is a sure indication that drugs of the aconite, belladonna or veratrum viride class will harm the patient It will tell in unmistakable terms what effect, if any, the treatment is having The so-called athletic heart, the tired heart, the hypertrophied heart and the nervous heart will all be revealed in a study of the pressure pulse, taken in conjunction with the other physical findings It accounts for a large number of high systolic pressures, which otherwise might be laid at the door of an atheroma

As the systolic approaches the diastolic pressure, the pressure pulse naturally becomes less and less, and death supervenes when they become the same A negative pressure pulse is inconsistent with physical life As the pressure pulse is nothing more than the reserve force of the heart measured in millimeters, the daily use of the sphygmomanometer, particularly in the treatment of acute diseases, is indispensable, and is the most reliable means at our command for judging the efficacy of the measures employed and in forming the prognosis

Consider, for example, in a case of pneumonia, when the question of bleeding, or the administration of digitalis or veratrum viride arises, what an aid the knowledge of the reserve heart power would be Or in the case of a weak, flabby heart, with a tendency to dilate, and a variable high diastolic pressure, what an inexpressible aid it would be to determine that the high pressure is a compensatory move to relieve the work of a weak organ It is much easier, everything else being equal, to fill a tube one-sixteenth of an inch in diameter than one one-eighth inch in diameter, and Nature, knowing well how true this is, attempts to reduce the volume of space to be filled, by contracting the vascular system, through the agency of the vasomotor constrictors Herein lies one of the principal reasons against indiscriminate use of vasomotor dilators, such as sodium nitrite, in every case of high diastolic pressure

Unless the diagnosis is correctly made, one is liable to combat the very means Nature knows to be needed in her efforts at repair The nitrites are as likely to be contraindicated as indicated in any case of high diastolic pressure, especially if the high systolic pressure alone is considered, for a high systolic pressure is as likely to be due to a pressure pulse abnormally high as anything else I have frequently seen a systolic pressure of 200 mm or more, and a diastolic pressure as low as 90 mm in persons over 50 years of age In such cases, the cause of the violent heart action would have to be investigated, rather than efforts made to reduce pressure through the arterial system itself Drugs of the nitrite class influence mainly the vessel walls, as is represented by the feeling of fulness in the head when amyl nitrite is inhaled, and are contraindicated when the power of the heart is to be conserved In the light of our present knowledge of blood pressures, scientific medicine is practiced only when they are intelligently studied and considered in connection with each case that presents itself

MEAN PRESSURE

The diastolic pressure plus half the pressure pulse must, of course, be the mean pressure, and is of value chiefly in recording the findings and keeping track of the general progress of the case It has no particular prognostic or diagnostic value, but is used mostly to record the general condition of the patient for future reference A diastolic pressure of 80 mm and a systolic pressure of 120 mm would mean a pressure pulse of the difference, or 40 mm, the three most important readings Now the general or average or mean pressure would be the diastolic pressure, 80 mm, plus half of 40, or 20 mm, making a mean pressure of 100 mm, a normal pressure for a person from 20 to 30 years of age In the beginning of this paper, I state that the systolic is the least important of any of the readings This is not exactly true It is at least more immediately important and valuable than the mean, but there can be no comparison between the relative values of it and either the diastolic pressure or the pressure pulse

I have considered only briefly some of the features of blood pressure findings which appear to me to be, at least in this particular locality, the most important I have the records, in tabulated form and according to age, of 500 examinations made during the last two years, but for the sake of brevity I will give the general averages for periods of ten years each, ranging from the age of 20 years to that of 60 years, including those apparently well and otherwise

AVERAGE BLOOD PRESSURES

Age, Years	Number of Examinations	Blood Pressure mm Diastolic	Systolic	Pressure Pulse
From 20 to 30	50	81	125	44
From 30 to 40	72	86	142	55
From 40 to 50	210	89	156	61
From 50 to 60	168	88	183	94

A considerable proportion of the readings were made from patients with abnormally high pressures It is my intention, in a subsequent paper, to tabulate the results according to age, occupation and condition of health Syphilis, alcohol, tobacco, in the order named, have played an important part in the production of permanent high diastolic pressures in these cases, while certain occupations requiring long continued mental concentration, especially if associated with the excessive use of tobacco, have seemed to operate mainly in the production of high systolic pressures, due principally to excessive heart action — abnormally high pressure pulse

Violent physical exercise produces high systolic pressure by means of cardiac hypertrophy Speaking generally, I would say that at the age of 40 years, the only safe procedure for the individual is to have pressure examinations made every three months, and from 60 years and up, every month Thus, in a majority of instances, a beginning dangerously high pressure due to a true arterial fibrosis or an incipient nephritis would be detected

A word regarding what I believe to be the correct method of estimating blood pressures does not seem out of place If possible, I have the patient lie flat on the back with the arm in supination, if this is not convenient, I have them sit quietly in a chair by a table, just sufficiently high to rest their elbows on it without raising the shoulders The entire arm is slipped out of the clothing, and the compression bag is placed about the arm at the level of the heart In order to quiet the nervousness which is likely to result from the proceedings, I talk to them quietly of other things, or occupy myself with other things, for a few minutes If the necessary manipulations in applying the instrument cause a rise in pulse beat, it is useless to proceed with the examination until the pulse rate falls to its normal level under the conditions

When everything is ready, I place the bell of the stethoscope over the brachial artery at its bifurcation into the ulna and radial Some slight pressure is required to hold the bell in place and to do away with the sound of friction between the skin and the instrument The bag is then gradually inflated until the compression is just sufficient to overcome the resistance of the arterial wall At this point the wall begins to give under the compression, and the linear contour of the wall is slightly changed Now a faint thump is heard The position of the mercurial column is noted and remembered The reading immediately beneath the point at which the first faint thump is heard is the diastolic pressure The bag is now rapidly inflated, and I listen meanwhile to the increasing and then decreasing sounds until they finally cease At this point, the opposite walls of the vessels are in close contact and the flow of blood is interrupted Now the mercurial column is run up a few millimeters more, and then the air allowed to escape from the compression bag very slowly At the point, minus a millimeter, where the first faint thump is again heard, coming down, is the systolic pressure The air is then allowed to escape rapidly until the thumping begins to grow faint again, when the air is released very slowly to the position where the last thump, coming down, is again heard This again, plus 1 mm , is the diastolic pressure The systolic minus the diastolic reading is the pressure pulse Every reading is recorded to compare with the previous readings By this means, the two pressures are obtained going up the scale and verified coming down the scale The process is repeated on the other arm One should be governed by the arm showing the highest readings Compression should not be made for a longer period than a minute and a half to two minutes, which is long enough for making the readings

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The Social Worker—A promoter of social well-being ought to be actuated by the principles, and be governed by the motives, of a scientist He should be thoroughly cognizant of those factors in human life which make or mar it, which build up or destroy cities, states and nations His field of vision must include the unborn generations, and his sympathy must not be moved by the physical stimuli of the moment alone, but must be broad enough to comprehend the eternal impulses of mankind—Harry H Howett, *Ohio Bull of Charities and Corrections*

THE OPERATIVE TREATMENT OF BRACHIAL PLEXUS PARALYSIS

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Injuries to the brachial plexus are common, especially at birth, for this reason the term "brachial birth palsy" is frequently used The prolonged forcible separation of the head from the shoulder by lateral extension during difficult labor is, in my opinion, the most frequent cause of this distressing condition In my series of fifty-six cases with operation, it has been difficult to ascertain whether the head was pulled upward to assist the after-coming shoulder to emerge over the perineum, or was pushed downward to allow the shoulder to slide beneath the symphysis, or whether, in breech presentations, the trunk and shoulder were pulled upward or pushed downward to aid in extricating the head It has also been hard to ascertain accurately whether there was much difficulty in freeing the after-coming arm, and whether or not the obstetrician was compelled to hook his fingers in the axilla or over the clavicle These data are frequently overlooked in the excitement of a difficult labor, and when the paralysis of one arm is observed later, the definite cause of it can be only conjectured The frequency of birth palsy of the right arm, with the usual occiput left anterior position of the head, would point to the perineum as being the obstruction to the delivery of the right shoulder and arm , in 70 per cent of the fifty-six cases with operation, the paralysis was of the right arm, and in 28 per cent , of the left arm , 78 per cent followed head presentations, while 22 per cent were the result of breech presentations

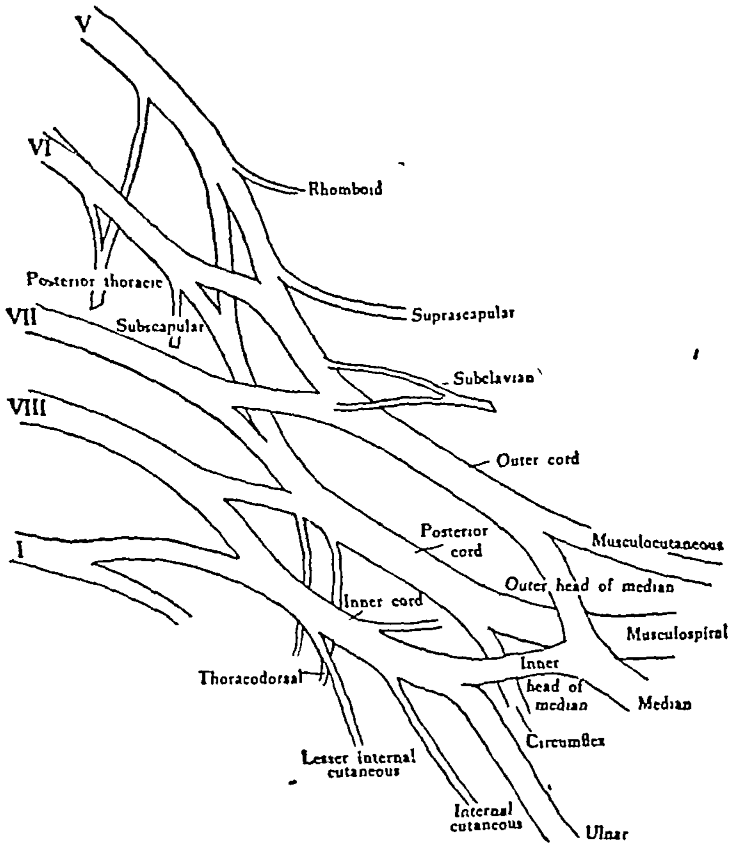

Fig 1 —The normal brachial plexus (diagrammatic) with its five nerve roots (V, VI, VII, VIII cervical, and I dorsal) forming the three cords, which subdivide into six main brachial nerves The supra scapular nerve is a most important branch and its impairment characterizes the deformity

In adults, the usual cause of brachial paralysis is a fall on the shoulder, forcibly separating it from the head, and in this manner the plexus is suddenly stretched until its nerve roots are damaged and even ruptured Direct blows over the lateral base of the neck at the upper portion of the supraclavicular space may also injure the brachial plexus However, the condition occurring in adults is comparatively rare, besides, it is limited usually to the upper arm type of palsy, and is fortunately in many cases of only temporary duration, that is, merely a nerve stretching, so that the paralysis disappears, under appropriate treatment, within three months

ANATOMIC CONSIDERATIONS

The brachial plexus, besides being comparatively superficial, is neither covered by any important structures in the neck, nor in close relation to them, and it can therefore be exposed easily and safely

It is formed primarily by the fifth, sixth, seventh and eighth cervical and first dorsal nerve roots The fifth and sixth nerve roots unite and form, together with a branch from the seventh root, the outer cord of the plexus — the origin of the outer head of the median nerve and the musculocutaneous nerve, the seventh, with a branch from the fifth and sixth and also one from the eighth nerve roots, forms the posterior cord of the plexus — the origin of the circumflex and musculospiral nerves, while the eighth cervical and the first dorsal roots form the inner cord of the plexus — the origin of the inner head of the median nerve, the ulnar and the internal cutaneous nerves A very important nerve, and one most constantly involved in lesions of the brachial plexus, is the suprascapular nerve, it arises from the outer side of the fifth root or just below the junction of the fifth and sixth nerve roots, and by a rather tortuous course supplies chiefly the external rotators of the upper arm, allowing the characteristic internal anterior rotation of the arm in the brachial plexus lesions Several small nerve branches arise from the plexus, the fifth sends a branch to the phrenic nerve (chiefly formed from the fourth cervical nerve root) and one to form the posterior thoracic nerve (the external respiratory nerve of Bell) with a branch from the sixth and seventh root, the rhomboid nerve also arises from the fifth nerve root, while the nerve to the subclavius muscle and the anterior thoracic nerves arises from below the junction of the fifth and sixth roots The subscapular and thoracodorsal nerves arise from the seventh root, while from the union of the eighth cervical and first dorsal roots arise the lesser internal cutaneous nerve and a branch to the intercostohumeral nerve

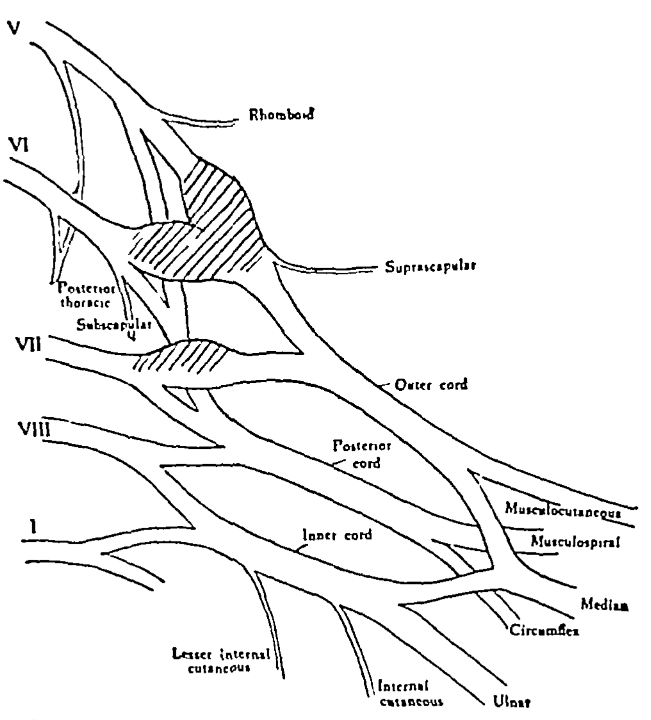

Fig 2 —The lesions producing the most common form of brachial paralysis — the upper arm type of birth palsy (Erb s paralysis) The site of the tear is at or just above the emergence of the suprascapular nerve the function of which is therefore impaired in almost all of the patients. Connective fibrous tissue (the shaded areas) may impair the lower nerves of the plexus in varying degree

The plexus lies directly beneath the deep cervical fascia and on the scalenus muscles at the outer border of the scalenus anticus muscle, the fifth and sixth nerve roots emerge obliquely between the scalenus anticus and medius muscles, the seventh root about 2 centimeters below and almost horizontally, while the eighth cervical and first dorsal roots appear more posteriorly behind the scalenus anticus muscle, where they unite to form the inner cord of the plexus The cords of the plexus extend outward and downward, they divide to form their respective nerves in definite relations to the subclavian and axillary vessels, the upper portion being above and behind the third part of the subclavian artery, while the lower portion is on the acromial side of the axillary vessels and enclosed in the axillary sheath

It is interesting from a morphologic standpoint to note that each primary nerve root divides into a ventral and a posterior portion — the ventral division sending a branch to either the outer or inner cord of the plexus, thus supplying the ventral cutaneous areas and ventral muscular groups of the arm, whereas the posterior divisions form the posterior cord of the plexus, and supply the posterior or dorsal cutaneous areas and posterior muscular groups of the arm Thus, we have the deltoid, biceps brachialis anticus, and the anterior flexor muscles of the forearm and of the hand, all supplied by the branches from the outer and inner cords of the plexus, whereas the triceps and the posterior extensors of the forearm and fingers are supplied by the posterior cord of the plexus A more detailed description of the plexus and its nerves cannot be discussed in this paper

TYPES OF BRACHIAL PLEXUS PARALYSIS

The types of brachial birth palsy depend on the site and extent of the lesion to the nerve roots of the plexus Total paralysis of the arm, including the hand and fingers, persisting for one year after birth, indicates an extensive injury to the entire plexus and a permanently paralyzed arm, in these cases, either all of the nerve roots are completely severed, or, in many cases, only several of the nerve roots are torn, and the remaining ones are so choked by the resulting fibrous tissue formations that they cannot functionate and are thus clinically the same as severed Naturally, fibrous tissue formations about and in nerve lesions make the results of peripheral neurologic surgery always problematic, especially following an interval of months and years after the injury Some of the nerve roots may be torn directly out of the spinal cord itself, even producing a homolateral increase of the deep reflexes and also a Babinski reflex, as suggested by Dr Taylor

There are many variations of incomplete brachial paralysis The upper arm type is the most common, in which the trouble is due to a lesion of the fifth and sixth cervical nerve roots near their union, the seventh nerve is also frequently involved As the suprascapular nerve emerges at or just below the junction of the fifth and sixth roots, its impairment is almost characteristic of brachial paralysis, in that the external rotators of the humerus are thus paralyzed and the arm is accordingly rotated inward by the unopposed action of the pectoralis major muscle, so that the forearm and the back of the hand are turned anteriorly in the position of pronation

The lower arm type of brachial birth paralysis is very infrequent alone, owing to the fact that in head presentations, the greatest tension is exerted on the upper roots of the plexus rather than on the lower ones, and thus a brachial paralysis of the upper arm type results, and in breech presentations other roots than merely the lower ones are injured, owing to the more extensive damage and greater tension on the entire plexus in this position Therefore, the lower arm type of palsy alone is rare, and it is usually associated with the upper arm type in varying degrees In it, the hand and some of the forearm muscles are paralyzed by a lesion of the lower nerve roots of the plexus — the eighth cervical and first dorsal, and frequently the seventh cervical roots As the sympathetic nerve fibers of the deep cervical ganglionic plexus enter the spinal cord through the first dorsal and at times through the eighth cervical roots, there is frequently a resulting ipsolateral enophthalmos and a narrowing of the pupil, owing to the unopposed action of the motor oculi nerve

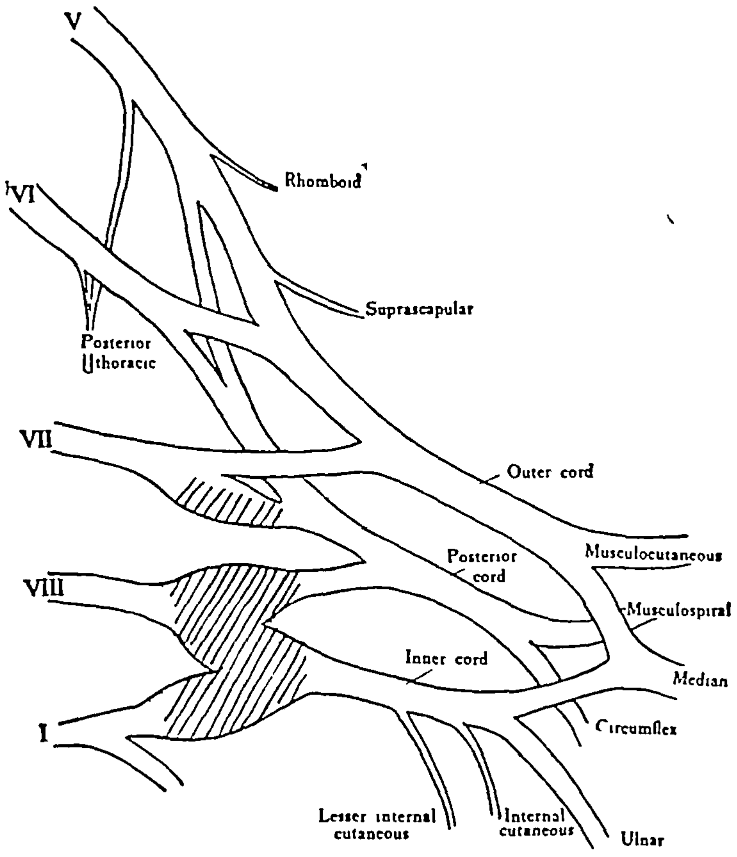

Fig 3 —The lower arm type of brachial plexus lesion resulting from breech presentations and pulling on the affected arm The entire plexus is usually involved in these cases, choked by a mass of resulting fibrous tissue, as in the shaded areas

Then again, there are the mild types of brachial plexus paralysis resulting usually from an overstretching of the roots with only a small amount of connective tissue formations Clinically, various degrees of awkwardness, usually of the upper arm type of impairment, may be the only indication of the plexus lesion

The atrophy of the arm muscles in brachial plexus paralysis is rarely so extreme as that occurring in the severe forms of poliomyelitis involving the entire arm Even in the upper arm type of brachial palsy, the atrophy of the deltoid and the external rotators seldom reaches that degree of wasting so characteristic of infantile paralysis affecting the same muscle groups, the "flail" shoulder joint only infrequently occurs in the brachial birth palsies I believe this is due not only to the fact that in poliomyelitis there are usually more than just one spinal cord segment affected primarily, so that the nerve cells of the adjacent anterior horns are also involved and thus a more extensive atrophy of the neighboring muscle groups, but also to the fact that in almost one half of the cases of brachial birth palsy, the nerve roots are found at operation not to be completely severed but merely choked by masses of scar tissue formations which prevent in varying degrees the normal afferent and efferent impulses from passing through this mechanical nerve block, it may be that in these cases, trophic impulses do succeed in passing through the obstruction, and thus the atrophy is not so marked as in similar cases of poliomyelitis There is usually, however, a definite shortening of the arm In this series of fifty-six patients on whom operation was performed, it is interesting to note that when the atrophy was not extreme (in 64 per cent of these cases), all of the nerve roots had been not entirely severed, but rather blocked by scar tissue formation

The impairment of sensation varies for the same reason It is most unusual, even in the more extreme cases of brachial birth palsy to demonstrate anesthesia and even a marked hypesthesia except over the outer upper third of the arm In the milder cases, especially when the atrophy is not extreme, little if any sensory impairment can be demonstrated Naturally, in small children, impairment of sensation is always most difficult to elicit with any degree of accuracy, even in adults, however, sensory impairment may not be ascertained, except in the more severe types of plexus paralysis

Dislocation of the shoulder joint is of fairly frequent occurrence To be sure, any mechanical force sufficient to rupture the brachial plexus may cause a dislocation of the head of the humerus at the shoulder joint, then again, a dislocation of the shoulder joint alone may, in itself, simulate an injury to the upper roots of the brachial plexus with resulting apparent paralysis of the arm — of the upper arm type of palsy, but to maintain that the dislocation of the shoulder joint is the cause of the brachial birth palsy is in my opinion decidedly misleading It must also be remembered that the paralysis and atrophy of the deltoid and external rotators, with a relaxation of the joint capsule due to a lesion of the upper roots of the plexus, permits the unopposed action of the pectoralis muscles to the extent that an anterior dislocation of the head of the humerus frequently results There is no question that dislocation at the shoulder joint does occur alone in children, and frequently following difficult labors, but I do contend that if a careful examination is made, these cases of simple dislocation of the shoulder joint can be differentiated from the cases of brachial paralysis due to a lesion of the brachial plexus, and also when the dislocation is merely associated with brachial paralysis due to a lesion of the plexus, the associated dislocation may occur at the same time the plexus was injured, or it may be the result of the nerve injury

Careful electrical tests for the reaction of degeneration in the older children, roentgenoscopy at the shoulder joint, and a thorough neurologic examination usually suffice to distinguish a simple dislocation from a simple plexus lesion In doubtful cases, especially in the associated lesions of shoulder dislocation and plexus paralysis, it is better judgment to expose the plexus through a small skin incision than to allow the condition of nerve injury to persist for months and even years, the longer the duration of the nerve lesion, the greater is the difficulty of anastomosing the nerve ends, the larger is the amount of scar tissue formation and the less marked the improvement ultimately In only seven of this series of fifty-six cases with operation did the associated dislocation at the shoulder joint render the diagnosis of a brachial plexus lesion doubtful, and yet in each of the doubtful cases, an injury to the plexus was confirmed at operation In only one case, that of a bilateral brachial paralysis of the upper arm type, a history of difficult labor and the paralysis of both arms observed by the midwife, father and the mother immediately after birth, did I not find at the operation a lesion of the plexus, there was a subluxation at both shoulder joints, reaction of degeneration of the deltoid and the external rotators and no sensory impairment elicited As I could not demonstrate that the upper roots had been avulsed from the spinal cord within the dura, or that the roots had been torn within the vertebral foramina (which may have been the condition although most unusual bilaterally), I now feel that this condition was one of poliomyelitis bilateral brachial plexus paralysis is most uncommon

Naturally, when permission for a skin incision to expose the brachial plexus cannot be obtained in doubtful cases associated with a shoulder dislocation, the impairment of the arm should be treated by all means as one of shoulder dislocation in the hope that the condition will improve, my experience with these cases, however, has not been encouraging from the end-results obtained Improvement frequently occurs, but if the plexus is injured, not a useful arm The fact that a dislocation at the shoulder joint in cases of brachial plexus paralysis is more frequently observed in the older children, those over 4 years of age, is of great importance in tending to show that the associated dislocation at the shoulder is merely secondary to the paralysis and atrophy of the shoulder muscles supplied by the upper roots of the injured brachial plexus, in children under 3 months of age, the dislocation of the shoulder is not so frequently observed, except alone as a simple dislocation Besides, it is most uncommon to observe a brachial plexus paralysis of the lower arm type which is associated with a dislocation at the shoulder joint, naturally, in this type of paralysis there is little or no impairment of the muscles about the shoulder joint, and consequently a later subluxation at the joint does not occur, and yet the mechanics of this type of plexus injury by breech presentation would be more liable to produce a dislocation at the shoulder joint than in the upper type of plexus injury by head presentation

TREATMENT

It is frequently asserted that the condition of brachial birth paralysis is cured either by immobilizing the affected arm in a sling or bandage and elevating the adjacent shoulder, thus allowing the nerve roots to unite, or by reducing the shoulder dislocation (when present) and treating the arm and shoulder in the same manner as for a simple shoulder dislocation This statement is perfectly true regarding many mild cases of paralysis of the arm following birth in which either the brachial plexus has been merely overstretched, thus causing a temporary paralysis of the arm, or where the impairment of the arm is due to a simple dislocation at the shoulder joint Naturally, immobilizing the affected arm and elevating the shoulder will permit the overstretched nerve roots to recover their function most readily, and even, in some cases, small tears of the nerve fibers themselves may unite, so that this treatment should be a routine procedure Again, the reduction of a simple shoulder dislocation will cause a disappearance of the apparent paralysis of the upper arm But to assume, therefore, that the condition of brachial plexus paralysis with rupture and separation of the nerve roots can thus be cured by this treatment in any considerable percentage of the cases is in my opinion not warranted by the end-results I have yet to see cured by this method of treatment one case of brachial plexus paralysis in which at birth there was total paralysis of the arm, hand and fingers No doubt improvement will occur in many cases with or even without any treatment at all, but *that* improvement rarely continues beyond 1 year of age, and the end-result is an impaired arm of greater or less severity, a useful arm is seldom obtained

It is now my practice in cases in which there was complete paralysis of the arm, hand and fingers at birth to advise a skin incision, exposing the brachial plexus at 1 month of age In each case in which the paralysis of the arm and hand was complete at birth, there was found at operation a rupture of two or more roots of the plexus I feel that a total paralysis of the arm and hand indicates an extensive injury and tear in the plexus, and although an improvement frequently follows even without the special treatment of immobilization and elevation of the shoulder (which should be used in all cases, operation or no operation), yet the ultimate result will be an impaired arm Usually, movement of the fingers occurs first, and then of the hand, possibly even the forearm can be flexed and extended with difficulty, but a perfect recovery is, in my opinion, most unusual

In those cases of total paralysis of the arms, I advise the exposure of the plexus at 1 month of age for several reasons

1 The child will stand the operation at that age better than at an earlier date, and as well as at any time several months later Little if any anesthesia need be used at one month of age, and, in most operations on children under 1 year of age, the danger of the anesthetic is the greater risk

2 The earlier the anastomosis of the nerve roots, the more perfect the union of the nerve fibers and consequently a greater improvement ultimately

3 The earlier the operation, the less the formation of fibrous tissue, so that the operation of plexus exposure and nerve anastomosis is less difficult technically The surrounding connective tissue resulting from the rupture of the plexus and the neighboring tissues with the associated hemorrhage of varying degree, and so forming the future scar tissue, can at this early date be dissected away with comparative ease and safety Less resection of the nerve ends is necessary to remove the fibrous tissue formation and future scar tissue within the nerve sheaths — a very discouraging factor in peripheral nerve anastomoses after long duration and the one most frequent cause of poor results

4 There is little or no retraction of the nerve ends at the age of 1 month, whereas, months later, the distal nerve roots may be retracted downward even beneath the clavicle, and in one case I was obliged to bisect the clavicle in order to expose the distal nerve end in the axilla and thus attempt its anastomosis with the proximal stump, in the less severe cases, the ends

may be buried in the surrounding tissues, requiring much patience, time and dissection to free them or even find them; this is particularly true of the distal end of the suprascapular nerve, which has normally a very tortuous course.

THE TECHNIC OF THE OPERATION

The exposure of the brachial plexus is a much less difficult procedure technically than is commonly believed. Not only is the plexus situated quite superficially from a surgical standpoint, but also the skin incision may be so placed in the supraclavicular space of the posterior triangle of the neck that the large blood vessels with the vagus and phrenic nerves are all internal to the pathway of approach to the plexus and are usually never seen; the spinal accessory nerve lies far above. Only the external jugular vein, occasionally unimportant superficial nerve filaments of the cervical plexus and the transverse cervical artery and vein are encountered as a rule, and these structures are frequently so placed that they may not require ligation or section. The subclavicular vessels rarely require exposure.

A transverse skin incision is advisable in that it can be placed in one of the natural horizontal folds or creases of the skin just above and parallel to the upper border of the clavicle, so that little if any scar is visible. Besides, the after-treatment of approximating the shoulder to the head by a bandage tends to hold the skin edges together, whereas this position would tend to keep the edges of the vertical skin incision separated, and a wide scar would ultimately result. Then again, a transverse incision permits a better retraction of the muscles and tissues in order to obtain a good exposure of the plexus; skilled retraction in this operation is most important. As in all peripheral neurologic anastomoses, absolute hemostasis is essential to obtain good results; the less oozing of blood, the fewer the adhesions — the bane of all nerve suturing. Warm saline compresses are possibly the most efficient means of controlling the oozing of blood, while careful, blunt dissection and gentle separation of the neighboring tissues tend to avoid the unnecessary loss of blood. It is usual to perform this operation on babies without the loss of more than 1 tablespoonful of blood, and if the blood that does stain the surrounding tissues is thoroughly removed by the application of warm saline solution before the incision is closed, adhesions and fibrous tissue formations will be practically avoided. The operation should not require more than one hour in even the more extensive injuries of the plexus, and in the younger children before the fibrous tissue has become firm and adherent the duration of the operation should be within forty minutes; if only the fifth and sixth nerve roots are involved, then twenty minutes may be sufficient. Naturally, in children of 3 months of age and younger, the less the amount and rapidity of the loss of blood, together with a light anesthetic of short duration, the better will be the assurance of an uncomplicated recovery. Then again, in ward cases, I feel it is very important following operation on these children under 1 year of age that the mother should nurse and take care of the child as under its normal conditions at home — conditions to which it has become accustomed and has adapted itself accordingly. This is particularly true following operations in selected cases of spastic paralysis due to an intracranial hemorrhage at birth, and also in conditions of spina bifida and hydrocephalus. The mother's milk, the warmth of the mother's breast and a careful avoidance of soiling the operative area, especially in cases of spina bifida in the lumbar region, are of the greatest importance in the obtaining of good results. The usual ward treatment of these babies operated on under 1 year of age is bad. In ward children under 1 year of age, if the mother cannot remain with the baby in the hospital before and after the operation, it is safer, in my opinion, to have the mother bring the child to the hospital on the morning of the operation, and then take it home several hours after the operation; naturally, if the child is not in the best of condition following the operation, then the mother and child would remain together in the hospital. Young babies accustomed to sleeping with their mothers will frequently "catch cold" if separated from them before or after an operation.

An excellent position of the patient for the operation is usually obtained by placing a firm, flat pillow, or small sand bag beneath the shoulder of the impaired arm; the anesthetist turns the head and face toward the other side, while a nurse depresses the shoulder by exerting a steady pull on the affected arm; in this manner, the supraclavicular space is freely exposed. The usual preparation of the operative area is now made, the skin incision outlined and dry sterile towels pinned to the skin so that only the skin incision is visible. The incision is a transverse one, 4 cm. in length, in a crease of the skin, about 2 cm. above and parallel to the upper margin of the clavicle. It lies in the lower part of the posterior triangular space with the external jugular vein usually as its center point. This vessel is either ligated or retracted, and then by blunt dissection and retraction of the deep cervical fat, sternomastoid and omohyoid muscles, the deep cervical fascia is exposed overlying the plexus and the scalenus muscles. The transverse process of the sixth cervical vertebra lies at the level of the junction of the fifth and sixth nerve roots, so that it can always be used as a guide. It is very easy to become "lost," if the retraction is exerted too much anteriorly or posteriorly. The deep cervical fascia is now incised over the plexus until a complete exposure of it is obtained. Normally, the deep cervical fascia is very thin and transparent, so that the underlying plexus, especially the fifth and sixth roots, can be seen glistening through it; but in these cases of injury to the plexus, the deep cervical fascia is thickened, whitish and nontransparent, owing to the fibrous tissue formation following the oozing of the blood at the time of the nerve tear; naturally, the earlier the operation, the more normal is the appearance of the fascia.

The location and course of the suprascapular nerve should now be ascertained; usually it is embedded in a mass of fibrous tissue, fat and connective tissue just external to the junction of the fifth and sixth nerve roots, and unless it is carefully dissected out, there is great risk of cutting it unknowingly so that it may be then very difficult to find the distal end. Besides, if the suprascapular nerve has not been primarily injured, but is merely unable to functionate owing to an injury of the fifth nerve root above the point of emergence of the suprascapular nerve, to cut it accidentally would only lessen the chances of a good result. I feel, therefore, that it is always advisable to locate the suprascapular nerve at the very beginning of the dissection.

In extensive lesions of the plexus, the fibrous tissue formation may be quite large, so that the nerve ends are entirely buried in a mass of scar tissue. In the hope that the continuity of all of the nerve roots has not been destroyed anatomically, this mass of constricting fibrous tissue should be carefully dissected away, first from the fifth and sixth roots, then from the seventh, and finally from the eighth cervical and first dorsal nerve roots It is rare for all of the roots to be torn, and if there are still normal nerve fibers in continuity within this mass of scar tissue, it is better judgment to save them even though it does require more time, than to remove the fibrous tissue *en bloc* in the belief that all the nerve roots were completely severed, and then to find that there were still good nerve fibers within this fibrous mass, and that if they had been free from the constriction of the surrounding scar tissue they would have undoubtedly functionated

If the nerve roots are found to be completely torn, their respective stumps should be secured, and their fibrous ends resected with a knife by slicing off transversely thin layers until the cross section of the nerve root of both the proximal and distal portions reveals the normal distinct nerve fibers in their bundles within the sheath — not the homogeneous whitish appearance of the scar tissue formation The older the children, the more extensive is this scar tissue formation within the nerve sheath, and unless this fibrous tissue is removed (even if an inch or more of the nerve end must be resected), a good result cannot be obtained It would be impossible for the proximal nerve fibers to grow down through the mass of fibrous tissue within the sheath of the nerve, and unless these fibrous ends are completely resected, a marked improvement cannot be expected I believe the poor results reported in peripheral neurologic surgery are due chiefly to this mechanical obstruction to the anastomosis of the individual nerve fibers If this obstruction is removed from each end of the torn nerve roots, it is merely a matter of technical approximation of the nerve ends, sheath to sheath, and the maintenance of this position for a period of three months until a firm anastomosis has been obtained By elevating the shoulder and inclining the head toward the plexus, it is possible to "bridge" gaps in the resected nerve roots of 3 cm and even greater without the tension on the nerve root becoming unduly high When the separation of the nerve ends is greater than 3 or 4 cm, it is usually better judgment to unite the ends by one of the methods of "splicing" now used, or even "bridging" the gap by several strands of silk in the hope that the nerve fibers will be thus permitted to grow down to the distal portion of the nerve A portion of a nerve removed from another part of the body may be used for the purpose, and the anastomosis carefully wrapped in Cargyle membrane, fat, muscle, etc These, however, are minor considerations, when compared with the desirability of suturing the nerve ends themselves, end to end, and sheath to sheath, as carefully and as accurately as is possible, and the necessity of removing all the fibrous tissue from the ends of the nerve roots, resecting them until normal nerve fibers are visible Fine black waxed silk is used to suture sheath to sheath, usually three sutures at one-third intervals around the nerve root After the suture of the roots have all been "placed," the ends are brought together by approximating the head and shoulder, as described above, and the sutures carefully tied The tissues are now carefully washed with warm saline solution, and if there is no oozing of blood, two or three catgut sutures are used to unite the subcutaneous tissues, and three or four fine silk sutures for the skin No drain is necessary A small sterile gauze compress is applied and retained in position by several strips of adhesive plaster, and then the usual gauze dressing The arm is raised over the head, being made to grasp the opposite ear, if possible, and a gauze bandage with adhesive plaster holds it in position I find this method of approximating the head and shoulder and then firmly securing the arm in position much more comfortable, safer and efficient than the various braces that have been used

RESULTS

It is only within the past year that I have had the opportunity to operate on children with brachial plexus paralysis at the age of 3 months and younger Before 1915, the children operated on by me were all over 1 year of age, the majority being between 4 and 6 years of age Naturally, the older the child, the less the ultimate recovery, and yet I believe that with the improved technic even these older children can be greatly benefited My oldest patient operated on for a brachial birth palsy was 14 years of age, the condition improved, but a good arm was not obtained The children operated on at 3 months of age have made excellent recoveries, this is due partly to the fact that in them there was not a complete tear of all of the roots of the plexus, whereas, in the children operated on at 1 month of age, the plexus had been practically torn apart in that the arm, hand or fingers could not be moved at all, and thus the nerve lesion was always a more severe one About half of these children operated on at 1 month of age, however, have shown a marked improvement, in four it may be possible to obtain a normal arm As a rule, however, the children operated on at 3 months of age have shown a more constant improvement, and yet, if they had been operated on at 1 month of age I am confident that a greater ultimate improvement would have occurred The operation itself is not a dangerous one, there have been no deaths in this series of fifty-six cases Two children had slight skin infections with no ill effects

This report is made in order to emphasize the advisability of early diagnosis and anastomosis and repair of the injured brachial plexus, with the knowledge that unless the injured nerve roots of the plexus are so treated a normal arm cannot be obtained, whereas with the operation at an early date, the child has the chance of obtaining a useful arm or at least an improved arm

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Bottled Waters—The Bureau of Chemistry of the United States Department of Agriculture has been making an investigation of bottled waters sold in interstate commerce, which are subject to the Food and Drugs Act After conferring with a large number of sanitarians and bacteriologists regarding a desirable standard for judging the sanitary character of bottled waters, the bureau has determined that the tolerances established by the Public Health Service of the Treasury Department for water served by interstate carriers is properly applicable to bottled waters sold in interstate commerce and imported from foreign countries These standards are as follows

1 The total number of bacteria developing on standard agar plates incubated twenty four hours at 37 C shall not exceed 100 per cubic centimeter provided that the estimate shall be made from not less than two plates showing such numbers and distribution of colonies as to indicate that the estimate is reliable and accurate

2 Not more than one out of five 10 c c. portions of any sample examined shall show (by the method of the Public Health Service) the presence of organisms of the *Bacillus coli* group

VARIATIONS IN THE STRENGTH OF POSITIVE WASSERMANN REACTIONS IN CASES OF UNTREATED SYPHILIS

WITH REMARKS ON THE VARIATIONS WHICH FOLLOW THE USE OF MERCURY *

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Several writers[1] have called attention during the past few years to the conflicting results reported from various laboratories to which specimens of blood taken from the same individual at the same time were sent In most cases the explanation offered for these differences has been that the various laboratory workers had used antigens which varied in strength[2] This is undoubtedly true However, in a recently completed series of more than 6,000 Wassermann reactions done on the serum from 5,000 individuals, we have made use of only one antigen, so that any variation described here cannot be attributed to this factor, as it has been repeatedly shown that this antigen is for all practical purposes constant,[3] and our conclusions after the use and comparison of more than twenty different lots of this cholesterin fortified alcoholic extract of human heart muscle antigen are in accord with those of the above mentioned authors One purpose of this paper is to discuss those variations in results which occur independent of antigen differences The technic used at this hospital has been described in detail previously[4]

The variations within moderate limits of the complement titer of the serum of healthy guinea-pigs is a well recognized fact[5] Very striking variations are also encountered in the resistance to hemolysis of the cells from different sheep so that frequently it is necessary to use 10 per cent complement with the cells from one sheep and 8 per cent with those from another sheep, the cells being of the same age, handled in the same way and titrated against the same lot of complement and amboceptor (Protocol 1)

PROTOCOL 1—VARIATION IN SHEEP CELLS *

Tube No	Standardized Amboceptor Dilution in c c	Guinea Pig Serum, 10 per cent	5 per cent Sheep Cells A	5 per cent Sheep Cells B	Remarks
1	5	5	5 C H	5 C H	All tubes made up to 2 5 c c with 0 85% salt solution and incubated 1 hr at 37 5 C
2	4	5	5 C H	5 C H	
3	3	5	5 C H	5 C H	
4	2	5	5 C H	5 C H	
5	1	5	5 N C H	5 C H	
6	25	4	5 C H	5 C H	
7	25	.3	5 C H	5 C H	
8	.25	25	5 C H	5 C H	
9	25	2	5 Sl H	5 C H	
10	25	1	5 0	5 Sl H	

* C H, complete hemolysis, N C H, nearly complete hemolysis, Sl H, slight hemolysis, 0, no hemolysis

That this variation in cells will in spite of the most careful and repeated titrations of the hemolytic system give slight differences in results in the Wassermann reaction is demonstrated when positive serums are titrated in duplicate for the fixing unit, and cells of different resistance used The cells being known to vary, the complement is titrated as carefully as possible for each lot of cells (Protocol 2)

The amboceptor, then, is the only constituent of the hemolytic system which is of constant strength Slight variations away from the ideal hemolytic system are to be expected, and will account for a slight difference in the fixing unit of positive serums as determined from day to day on the same specimen of serum Knowing this fact, it was thought advisable to repeat the work of Craig,[6] who found in a group of syphilitics not being treated and under ideal conditions for study most surprising variations in the fixing unit, which was determined daily for the same individual The variation in at least two of the ten cases reported by him was so extreme as to lead to a report of + — (practically a negative reaction) on one day and + + (complete inhibition) on the following day

PROTOCOL 2—VARIATION WHEN POSITIVE SERUMS ARE TITRATED IN DUPLICATE WITH CELLS OF DIFFERENT RESISTANCE

Patient	Cells A with 10% Comp	Cells B with 8% Comp	Remarks
O'C	012 ++++	025 ++++ 012 +++	Same lot of complement Same amboceptor Same specimen of serum
B	012 ++++	025 ++++ 012 +	
R.	006 ++++	012 ++++ 006 +	

We accordingly selected a group of twenty cases of untreated syphilis including every stage of the disease The patients were all in the medical wards of the hospital, where they were on a more or less standard diet and without alcohol All specimens were collected under aseptic precautions, and care was taken that none of these cases received any antisyphilitic treatment during the period of study The group includes two primary cases, two secondary cases with rash and mucous patches, two cases of cerebrospinal syphilis, two cases of tabes dorsalis, two cases of tertiary syphilis with gumma formation, two cases of syphilis of the aorta, four cases in the latent stage, and four other cases also in the latent stage, but convalescent from some acute infectious disease

The blood from each of these individuals was obtained every day for seven days In several cases the blood was tested against seven different hemolytic systems, and in every case the seven specimens were kept until the end of the period and then tested against a single hemolytic system The results when daily tests were made were variable within narrow limits (Protocol 3)

It will be readily seen from Protocol 3 that the variations were minute, and in addition that in at least three of the four cases tabulated the variation was in the same direction on the same day This gives the impression that it was our technic which varied and not the patient's serum This surmise was well borne

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* From the Medical Clinic of the Peter Bent Brigham Hospital

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[2] Kolmer, J A Boston Med and Surg Jour, 1916, clxxiv, 58

[3] Walker, I C, and Swift, H F A Study of the Addition of Cholesterin to the Alcoholic Extracts of Tissues Used for Antigens in the Wassermann Reaction, Jour Exper Med, 1913, xviii, 75 Walker, I C The Specificity of Cholesterin with Syphilitic Serums and of Cholesterin Reinforced Heart Antigen in the Wassermann Reaction, Arch Int Med, October, 1914, p 563 Fildes, P, and McIntosh, J The Wassermann Reaction and Its Application to Neurology, Brain, 1913, xxxvi, 193

[4] Walker, I C The Specificity of Cholesterin with Syphilitic Serums and of Cholesterin Reinforced Heart Antigen in the Wassermann Reaction, Arch Int Med, October, 1914, p 563

[5] Wood, F C Chemical and Microscopical Diagnosis, Ed 3, New York, D Appleton & Co, 191[illegible] p 687

[6] Craig, Variations in the Strength of the Wassermann Reaction in Untreated Syphilitic Infections, The Journal A M A, April 18, 1914, p 1232

out by the titration of these four serums on the same day against a single hemolytic system in which no variation whatever was found (Protocol 4)

The seven specimens from each of the remaining sixteen cases in the series of twenty were likewise titrated for the fixing unit against a single hemolytic system In no case was variation worth mentioning found The case which showed the most appreciable variation is shown in Protocol 5

The remaining nineteen cases showed either an absolutely constant titer for each specimen or a variation which was decidedly within the limits of mechanical accuracy This bears out our experience of the past two years, during which time we have recorded repeated tests on the blood of more than 100 different patients with syphilis, who were either in the latent stage and given no treatment or were given only enough treatment to clear up the local lesions for which they come to the hospital wards or outdoor department These tests have been at different intervals of time, some repeated three or four times within a month, many more repeated three or more times at intervals of six months or less Quite a few have been repeated at intervals of a year or more These repeated tests total approximately 300, and we have never noted sufficient variation in these cases to cause us to credit the assertion that the positiveness of the serum itself is subject to changes from day to day or from month to month without treatment In other words, there has been no discrepancy in results not accounted for by a slight variance in the hemolytic system Our work, then, agrees with that of Field[7] who, unknown to himself at the time, titrated the blood of one individual four times within one month with identical results

It has been long a matter of common knowledge that mercury in any form and given by any method is apt very quickly to cause a positive reaction to become negative This false negative just as quickly becomes ++++ again when the administration of mercury is stopped The comparative effect on the Wassermann reaction of various salts of mercury given intramuscularly, as well as the comparative effect of mercury given by different methods, was discussed as early as 1910 by Swift[8]

Recently we have seen two cases frankly syphilitic showing in each instance a healing chancre, rash and mucous patches which gave entirely negative Wassermann reactions In both cases mercury had been given to the point of salivation One patient was given salvarsan and became + + + + ten days later The other patient was kept under observation without any treatment and in one month became + + + +

The tendency of salvarsan to bring out a positive reaction is well shown by a comparison of these cases They also bear out the statement of Swift that the early cases are more quickly rendered negative by mercury than the older ones

Following the observation of these two cases, an attempt has been made to determine how long it is necessary to wait after treatment with mercury before any dependence can be placed on a negative test and also to determine how much mercury is necessary to convert a ++++ reaction to a temporarily negative one After following a fairly large number of cases for more than a year and doing their Wassermann reactions repeatedly during this period, we have reached the conclusion that the individual variation in cases is so great that rules of only doubtful value can be

PROTOCOL 3—RESULTS OF DAILY TESTS

Patient	Hemolytic System						
	No 1	No 2	No 3	No 4	No 5	No 6	No 7
A	05 ++++	05 ++++	01 ++++	05 ++++	05 ++++	05 ++++	06 ++++
B	02 ++++	02 ++++	01 ++++	02 ++++	02 ++++	02 ++++	03 ++++
C	003 ++++	003 ++++	003 ++++	003 ++++	003 ++++	003 ++++	006 ++++
D	006 ++++	006 ++++	003 ++++	006 ++++	006 ++++	006 ++++	012 ++++

PROTOCOL 4—RESULTS OF TITRATION ON SAME DAY AGAINST A SINGLE HEMOLYTIC SYSTEM

Patient	Specimen						
	No 1	No 2	No 3	No 4	No 5	No 6	No 7
A	05 ++++	05 ++++	05 ++++	05 ++++	05 ++++	05 ++++	05 ++++
B	02 ++++	02 ++++	02 ++++	02 ++++	02 ++++	02 ++++	02 ++++
C	003 ++++	003 ++++	003 ++++	003 ++++	003 ++++	003 ++++	003 ++++
D	006 ++++	006 ++++	006 ++++	006 ++++	006 ++++	006 ++++	006 ++++

PROTOCOL 5—VARIATION IN CASE OF O C CONVALESCENT PNEUMONIA

Date	Amount of Serum Used c c							
	0 10	08	06	05	04	03	025	012
4/ 5/15	++++	++++	++++	++++	++++	++++	Negative	Negative
4/ 6/15	++++	++++	++++	++++	++++	++++	+++	Negative
4/ 7/15	++++	++++	++++	++++	++++	++++	++++	Negative
4/ 8/15	++++	++++	++++	++++	++++	++++	+	Negative
4/ 9/15	++++	++++	++++	++++	++++	++++	Negative	Negative
4/10/15	++++	++++	++++	++++	++++	++++	+	Negative
4/11/15	++++	++++	++++	++++	++++	++++	Negative	Negative

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[7] Field C W The Use of Cholesterin Antigen in the Wassermann Reaction The Journal A. M A. May 23 1914, p 1620

[8] Swift H F The Effect of Treatment on the Wassermann Reaction Arch Int Med December, 1910, p 626

established, and certainly no hard and fast statements can be made

A group of twenty-five patients in various stages and of varying age of infection found + + + + on more than one occasion were given mercury intramuscularly until their Wassermann reactions became negative Treatment was then discontinued until they again became + + + + The average length of time until the latter occurred was about one month The extremes were, on the one hand, ten days, and on the other hand, four months The more active the case the more readily the reaction returned + + + + as one would naturally suppose Age of infection seemed to make little difference in the rapidity of the return to positive As regards the amount of treatment necessary to get these cases negative, absolutely no conclusion can be reached except as mentioned before, that the more recent the infection the more easily the reaction is rendered negative In some cases not included in this group, the reaction has never become negative, though they have been under treatment almost continuously for more than a year This was noted particularly in cases of general paralysis of the insane and of syphilitic aortitis It was also true of a number of cases in which small amounts of salvarsan were given in addition to the mercury

A few typical examples of the cases showing changes from positive to negative and back again are shown in Protocol 6

The regularity with which these cases change from + + + + to negative with mercury and back to + + + + again when treatment is stopped is very interesting, particularly when these cases are compared with those in which salvarsan alone is used or in which no treatment is given The unfailing regularity with which cases not under treatment have given a + + + + reaction whenever done during a period of more than two years has already been noted in this paper In a recent article Nelson and Anderson[9] describe in detail the changes produced on the Wassermann reaction by mercury salicylate given intramuscularly, noting also in their paper cases treated exactly similarly in which the reaction did not change Their results directly parallel ours and those of other observers, but their conclusions differ markedly The statement is made by them that mercury salicylate has little value in the treatment of syphilis, and they attribute the finding of negative reactions after the use of mercury to chance, and base their belief on the work of Craig[6] In view of our findings previously noted, the conclusions of Nelson and Anderson seem to us to be open to question, and it is our belief that the negative Wassermann reactions noted by them are directly attributable to mercury We are also of the opinion that the serum from cases of syphilis not under treatment will show very little variation in the degree of positiveness during the course of a few weeks, months or even years What changes they ultimately undergo under these conditions we do not know because of the insufficient length of time during which our cases have been under observation No one can deny that mercury given in any form has prompt and beneficial effect on the visible lesions of syphilis In view of this fact and in view of its prompt effect on the Wassermann reaction, we consider the conclusions of Nelson and Anderson unwarranted

PROTOCOL 6—TYPICAL EXAMPLES OF CHANGES FROM POSITIVE TO NEGATIVE AND BACK AGAIN

Name	Age of Infection	Condition	Previous Treatment	Wassermann Reaction	Subsequent Course
Mr D	1 yr	Latent	One dose salvarsan 1 year ago	7/24/14 ++++	12 injections mercury 11/10/14 neg , no treatment until 1/26/15 ++++, inunctions 3 mos 6/7/15 neg , no treatment 4 mos , 10/4/15 ++++, 2 mos inunctions, 12/16/15 neg
Mrs D	6 mos	Periostitis, skull	None	7/24/14 ++++	14 injections mercury, 11/10/14 neg no treatment until 1/15/15 ++++ inunctions 3 mos , 4/6/15 + inunctions 2 mos , 10/8/15 neg , no treatment for 2 mos 10/8/15 ++++
Mr N	4 mos	Latent	Mercury 3 mos , none for 1 mo	6/26/14 ++++	20 injections mercury and 3 mos of inunctions 4/10/15 neg no treatment until 10/29/15 ++++ inunctions 1 mo , 12/17/15 ++++
Mr R	7 mos	Rash and mucous patches	Six mos of mercury, salivated now	7/16/15 negative	No treatment for 1 mo , 8/21/15 ++++, salvarsan 2 1 grams, 10/18/15 ++++, salvarsan 2.2 grams 11/20/15 ++++, 6 injections of mercury, 12/12/15 neg
Mr S	5 mos	Rash and mucous patches	Four mos of mercury, salivated now	5/22/15 negative	6/1/15 neg , 6/2/15 0.3 gm salvarsan, 6/4/15 neg , 6/6/15 neg , 6/8/15 neg , 6/12/15 ++++ 1 mo mercury inunctions, 7/15/15 neg no treatment for 5 mos , 12/10/15 ++++

CONCLUSIONS

1 The variations from month to month in the degree of positiveness of serums in cases of untreated syphilis is slight

2 The fixing unit for the serums in cases of untreated syphilis does not vary appreciably from day to day

3 Any variation found in daily titration for the fixing unit is due, provided the antigen is constant, to variation in the hemolytic system

4 On the majority of positive Wassermann reactions, mercury has a prompt and powerful, although fleeting, action

5 We cannot agree with the statement that mercury is of little value in the treatment of syphilis

Disinfection of Hides—An amendment to Order 211 of the Bureau of Animal Industry, United States Department of Agriculture, provides that the skins and hides from animals condemned for tuberculosis or any disease communicable to man or other animal may be removed from the place where they have been slaughtered for tanning or other industrial use only after disinfection by being immersed for not less than five minutes in a 5 per cent solution of liquor cresolis compositus or a 5 per cent solution of phenol, or for not less than four hours in a mixture composed of one part mercuric chlorid to 1,000 parts salt solution containing not less than 15 per cent of sodium chlorid This would provide against the spread of anthrax and perhaps foot and mouth disease, as well as tuberculosis

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[9] Nelson, Kent, and Anderson, E A The Use of Mercury Salicylate in Syphilis A Record of Its Influence on the Wassermann Reaction in Fifty Cases, The Journal A M A, Nov 27, 1915, p 1905

RECURRENT PARALYSIS OF THE FACIAL NERVE

AND ITS RELATION TO THE SO-CALLED FACIOPLEGIC MIGRAINE

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An interesting and important chapter in the symptomatology of migraine is that concerned with the paralytic complications which may occur in this disease I do not refer to those transient and evanescent symptoms which are so common, but to the more serious and permanent sequelae These may be divided into two groups (*a*) those of cerebral origin, namely, hemiplegia, hemianopsia and aphasia following organic vascular lesions during the migraine seizure, and (*b*) those affecting the cranial nerves, for example, the optic nerve and retina, and more especially the ophthalmoplegias The latter complication is by far the most important by reason of its frequency, and at the present time constitutes a well established clinical group, the ophthalmoplegic migraine, of which about 100 cases have been reported in the literature Of these the oculomotor nerve is most frequently affected, rarely the abducens and very rarely the trochlearis Various combinations of these ocular palsies have also been observed, and even complete ophthalmoplegia Curiously enough, the other motor cranial nerves are not involved in migraine with the exception of the facial nerve, the so-called facioplegic migraine The basis on which this clinical type rests is a very slight one, and in my opinion has not been proved What is generally accepted by many systematic writers as hemicrania facioplegica is nothing more than relapsing facial palsy in a subject afflicted with migraine

"Recurrent" or "relapsing" facial palsy is a term which has been used to describe a group of cases characterized by a peculiar tendency to multiple attacks or recurrences The palsy may recur always on the same side, the relapsing type, or more frequently there is alternate involvement of the two sides, in which case the term "relapsing alternating" is more accurate The individual attacks in these cases may be separated by months or years, and do not differ in etiology and symptomatology from the usual clinical types of peripheral facial palsies The interest which attaches to them is due merely to the frequency of the occurrence in a single individual, and the underlying pathologic tendencies which may favor such a predisposition

This tendency is not always confined to one member of a family, but familial and even hereditary types are sometimes encountered For example, Oppenheim[1] has recorded a family in which three of its members, all sufferers from diabetes, had recurrent attacks of facial palsy The frequency of the relapsing form of Bell's palsy is much greater than is generally supposed

Remak,[2] in a series of 200 cases, personally observed, noted a tendency to recurrence in 3 per cent, and Bernhardt,[3] on the basis of an extensive statistical study, placed the percentage as high as 7 2 per cent

The etiologic factors are the same as those which cause the usual facial palsy with one attack, namely, the rheumatic or refrigeration palsy after exposure to cold, infections and intoxications, as diabetes, syphilis and otitis media, and perhaps also the congenital narrowing of the stylomastoid foramen which would predispose the nerve to pressure from slight inflammatory reactions In Bernhardt's series of relapsing palsies, otitis media, syphilis and diabetes were present in a third of the cases

THE SO-CALLED FACIOPLEGIC MIGRAINE

I would mention here two other types of relapsing facial palsies which have found their way into medical literature and are now widely quoted as examples of periodical facial palsy in the sense in which this term was used by Moebius[4] to describe the oculomotor palsies associated with migraine One type is based on a fragmentary clinical report by Hatchek,[5] in which relapse of facial paralysis were observed in a child with basal tumor This case he regarded as analogous to the so-called periodic oculomotor palsies of the Moebius type No clinical data other than the brief statement just mentioned are given in the report of the society proceedings, and yet the attempt has been made to establish an important clinical group on this slight and uncertain evidence It is probable that most neurologists of experience have observed such intermittent and transient attacks of facial palsy from pressure in cases of tumor beneath the tentorium, and yet would not think of giving them this interpretation

The other type is founded on the oft-quoted contribution of Rossolimo[6] entitled "Relapsing Facial Palsy in Migraine"

> In this case a woman, aged 28, had been subject since the age of puberty to recurrent attacks of migraine, an inheritance from the mother In the migrainous attacks which were quite typical, the pain was often localized in the mastoid and occipital region She had at various times four attacks of facial palsy, in all of which the accompanying pain was localized in and around the mastoid region In the first attack the pain was situated in the region of the left mastoid and superior maxilla, and lasted a week It was accompanied by tinnitus aurium and a metallic taste on the tongue, and was followed by a typical facial palsy on the left side from which she recovered in five months The attending physician at the time ascribed the condition to an exposure to cold Three years later there was a similar attack. After sleeping by an open window on a train she awoke with pain localized in the neighborhood of the right ear and upper jaw and with all the accompanying symptoms of the first attack. The right facial palsy which ensued cleared up in about five months Two years later there was a palsy on the right side of a similar nature, which was also preceded by localized headaches, and three years after this the left side was again involved with pain and the usual symptoms of facial palsy

This case is reported by Rossolimo as one of migraine with relapsing facial palsy in which there is assumed to be an etiologic relationship between the migraine, which was undoubtedly present, and the multiple recurrences of facial palsy On this evidence Rossolimo postulates a *facioplegic type of migraine* similar in nature to the ophthalmoplegic variety of Moebius which occupies so established a place in literature It should be emphasized, however, that this observation stands alone and does not present sufficient grounds on which to base such an analogy In the Rossolimo case, the symptomatology of the attacks do not differ in the least from the usual clinical picture of relapsing facial palsy

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[1] Oppenheim Recidivirende Facialis Lahmung Lehrbuch der Nervenkrankheiten 1914 i 641

[2] Remak, cited by Bernhardt Neurol Centralbl 1899 p 98

[3] Bernhardt Ueber die sogenannte recidivirenden Facialis Lahmung Neurol Centralbl, 1899 xviii 98

[4] Moebius Recidivirende Facialis Lähmung Erlenmeyers Centralbl., 1886 pp 82 797

[5] Hatchek Ueber recidivirende Facialis Lahmung Wien. med Presse 1894, iv, 146

[6] Rossolimo Recidivirende Facialis Lahmung bei Migraine Neurol Centralbl 1901 xx 744

PAIN IN FACIAL PALSY

It has been well known since the studies of Webber[7] and Testaz,[8] and especially my own contributions to the sensory functions of the facial nerve, that severe pain is a frequent precursor and accompaniment of facial paralysis When present it is localized in the ear and mastoid region, often radiating to the occiput and trigeminal distribution The pain under such circumstances may reach an extreme degree of intensity and persistence, and is quite sufficient in itself to explain the severe localized headaches in the Rossolimo case, and may well give rise to the suspicion of a migraine seizure That migraine coexisted in this case there can be no question but as both migraine and facial palsy are comparatively frequent maladies, it requires no great stretch of the imagination to explain their joint occurrence in the same individual though etiologically unrelated and distinct And, while the idea advanced by Rossolimo is suggestive, there is no reason at present for accepting a facioplegic type of migraine, an opinion which is shared by other neurologists who have been workers in this field

With these preliminary remarks I will proceed to the report of personal observations of cases of relapsing facial palsy associated with pain in the ear and occipital headache

CASE REPORTS

Case 1—*Relapsing alternating facial palsy associated with pain, three attacks*

History—A woman, aged 23, a gold leaf cutter by occupation, who had chorea at the age of 14 and whose family history is negative as regards facial palsy and migraine, had her first attack of facial palsy at the age of 17 It was situated on the left side Paralysis was said to have been complete and was accompanied by earache and severe pains in the mastoid region In the course of a few months she made a fair improvement, but there has always remained a slight permanent defect with weakness, twitchings and a tendency to contractures on the left side The second attack of facial palsy occurred at the age of 22 In this the paralysis was situated on the *right* side and was also accompanied by quite severe pain in the ear and mastoid region It followed an exposure to cold, sleeping by an open window on the train The hearing was not affected, and there was no discharge from the ear The sense of taste was lost on the right side of the tongue Voluntary motion returned at the end of six months, and she made a very fair recovery The third and last attack occurred in January, 1912, and was again on the right side, following seven months after the previous one Like this it followed an exposure to cold She had at the onset sore throat, and severe pains in the ear and mastoid region of the right side, which continued for some days

Examination—April 11, 1912, there was a seventh palsy of the peripheral type on the right side, involving all the branches of the nerve Closure of the right eye was weak, and some weakness was also apparent on the left, a paretic remnant of the previous attack On the right side there was weakness of the lower branch and on the left a tendency to overaction or contracture, the sequela of the previous lesion There was very little movement in the upper branches on either side On the left, which was the side of the old palsy, there were, in addition to overaction, fibrillary and clonic twitchings synchronous with the act of winking The sense of taste was normal, hearing was equal on the two sides There was no tinnitus aurium Tear secretion was normal

Electric Examination—The right side showed complete reactions of degeneration On the left side there was no faradic response and only very weak galvanic response, but no qualitative changes The pupils were equal and reacted normally All the other cranial nerves were normal The optic disks were normal The general neurologic examination was negative, and the urine was free from albumin and sugar

Comment—This was a typical example of relapsing alternating facial palsy, two of the attacks were on the right and one on the left side As is so common in these cases, the palsy followed exposure to cold During the early days of the palsy there was very definite and at times severe pain in the ear and mastoid region caused by involvement of the sensory system of the facial nerve[9] After a few days this localized pain subsided, and might very well have been interpreted as a migraine phenomenon if we disregard the existence of pain as a common symptom of facial palsy In the bilateral involvement of the face which occurs there is a weakness on one side, the result of a recent lesion, with contractural overaction on the opposite side following the older palsy

Case 2—*Relapsing alternating facial palsy with pain, in a girl whose father had had similar attacks*

History—Miss B W, aged 21, single, was referred to me for a recent peripheral facial palsy on the left side. She stated that this was the third attack There was no history of migraine in the family Her father had had two attacks of facial paralysis, both on the left side, the first attack occurring fifteen years ago and the second nine years later They were attributed by his physician to exposure to cold, and he made a good recovery from each attack. Hearing was not affected in either The patient's first attack occurred when she was 14 years old, and it was several months before the weakness of the face disappeared She does not remember which side of the face was affected at this time, but she does recall receiving electric treatment and that recovery was complete The second attack occurred two years later, that is in her sixteenth year, and involved the right side of the face and was associated with pains in the ear and mastoid region Recovery from this attack was incomplete, and there still persists some weakness and a tendency to contracture on this side The third and last attack began a fortnight ago with pains in and about the left ear, they were quite severe and lasted for several days A day or two later, left facial palsy was observed

Eamination—March 13, 1911, there was complete paralysis of the left side of the face of the peripheral type The taste was disturbed over the anterior two thirds of the tongue on the affected side No herpetic vesicles or scars were present in or about the auricle, and there was no hypesthesia of the conchal region There was no tinnitus aurium Hearing was normal The tear reflex was present on both sides and equal There were also evidences of a weakness of innervation with twitchings and contractures, the result of the previous attack on the right side

Electric Examination—This showed partial reactions of degeneration on the affected side Optic and other cranial nerves were normal The general neurologic examination was negative The urine was free from albumin and sugar

Reexamination—One year later, April 1, 1912, there were evidences of a slight return of power on the left side of the face in all its branches, but with a distinct tendency to overaction and contracture Twitchings and quiverings of the muscles about the cheek and angle of the mouth were evident, especially on closure of the eyes Electric examination showed a slight galvanic response on the left side (cathodal closure contraction was greater than anodal closure contraction) with no evidence of sluggish or vermicular contractions There was no response to strong faradic currents

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[7] Webber Pain and Facial Palsy, Boston Med and Surg Jour, 1876, p 750

[8] Testaz Paralysie douloureuse de la septième paire, Thèse de Paris, 1887

[9] Hunt, J Ramsay The Sensory System of the Facial Nerve and Its Symptomatology, Jour Nerv and Ment Dis, 1909, p 321

Comment—This case is also a typical example of the relapsing facial palsy Here again the associated pain and localized headache in the mastoid region is to be emphasized due to involvement of the sensory fibers of the seventh nerve A superficial resemblance to migraine attack may be simulated in such a case, and if migraine were also present, as in the Rossolimo case might give rise to uncertainty as to their etiologic relationship

Case 3—*Recurrent facial palsy accompanied by pain, three attacks*

History—The patient was a man aged 45, a cigar maker by occupation He denied syphilis, had had no ear disease, or history of migraine, and no family history of attacks or facial palsy His first attack occurred at the age of 10, and was on the right side. It had followed exposure to a cold wind He recalls now no pain during this seizure and recovery was complete in about four weeks The second attack occurred in his thirty-sixth year, and was also on the right side. It was accompanied by considerable pain in the mastoid region There were no disturbances of hearing Complete recovery ensued in five weeks The third and present attack appeared in his forty-fifth year, and was ushered in by a severe pain behind the right ear which lasted three weeks Taste was not affected and hearing was normal There were no sore throat and no herpetic eruption

Examination—December, 1911, there was a partial right facial palsy involving all three branches of the nerve Taste was not affected Hearing was equal on the two sides and normal There was no hypesthesia of the concha or evidence of herpetic vesicles or scars The tear reflex was present and equal on the two sides

Electric Examination—This showed partial reactions of degeneration of the right side of the face. The urine was free from albumin and sugar The optic disks and other cranial nerves were normal The general neurologic examination was negative

Comment—These were typical recurrences of facial palsy associated with localized pain in the ear and mastoid region from involvement of the sensory system of the seventh nerve.

REMARKS

The recurrent or relapsing facial palsy associated with pain in the ear and occipital region is, therefore, merely a peripheral paralysis of the seventh nerve, in which is manifested a peculiar tendency to multiple attacks or recurrences The symptomatology corresponds in all its essentials to the more usual type in which there is but a single attack, and similar etiologic factors are also in evidence Some emphasis may be placed on the theory of a narrow exit at the stylomastoid foramen, which was advanced by Despaigne[10] in explanation of these recurrences, and which might predispose the nerve to compression from very slight inflammatory cause Such an anomaly might well be inherited This, however, is only an ingenious theory, and calls for more definite pathologic confirmation Occasionally there is a history of diabetes, so that this possibility should always be considered Most of the cases are of infectious or refrigeration origin In the infectious and rheumatic groups there is simply a constitutional tendency to peculiar local reactions to cold or infections, which expresses itself in terms of facial palsy, very similar to that which is observed in tonsillitis, sore throat, lumbago, sciatica and other rheumatic manifestations, with their well-known tendency to recurrences A pathologic theory of the rheumatic or refrigeration palsies, advocated by many, is that of a perineuritis of the facial nerve similar to brachial and sciatic perineuritis of rheumatic origin Such a lesion would be favored by the exposed situation of the nerve, any swelling of its structure within the fallopian aqueduct being immediately registered as pressure palsy, a result which would naturally be enhanced by the presence of a congenitally narrow canal This theory would explain some of the familial and hereditary types which are occasionally observed, the constitutional tendency or diathesis being also transmitted

Facial palsy as a sequela of the migraine attack, the *facioplegic migraine* of some writers, is not a clinical entity At the present time there are no adequate reasons for the acceptance of such a clinical type The Rossolimo[6] case which forms the chief support of this teaching is evidently only a recurrent facial palsy with marked sensory symptoms in a woman afflicted with migraine, and one searches the literature in vain for examples of a true facioplegic migraine Furthermore, the fragmentary case report of Hatchek,[5] which is sometimes spoken of as a periodic facial palsy, as this term was used by Moebius to describe the periodical oculomotor palsies, is an equally erroneous interpretation The relapses in the Hatchek case, conservatively interpreted, represent nothing more than pressure or traction of the facial nerve, this giving rise to intermittence in the paralysis, an occurrence which is by no means rare as a forerunner of permanent palsy in cases of subtentorial tumors If the facial nerve has any relation to migraine, which is so well established in the case of the ocular nerves, this relationship has yet to be demonstrated The cases thus far cited do not furnish sufficient grounds for any such assumption Therefore titles like "periodic facial palsy" and "facioplegic migraine" are misnomers which have crept into some of the best monographs dealing with this subject Such terms are misleading and denote nothing more than transient intermittent facial palsy as a focal symptom of basal tumor in the one case, and the not uncommon relapsing facial palsy associated with pain in the other It is of course self-evident that migraine and facial palsy, both of which are common affections, may be encountered in the same individual but are etiologically distinct

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EXTRAGENITAL SYPHILITIC INFECTION

REPORT OF CASE

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Accidental extragenital infection from syphilis is not a rare condition, and cases are reported from time to time in medical journals My only excuse for reporting the following case is once more to remind the physician of the need for greater care in protecting himself from infection

This patient proves one other important fact, that since the introduction of serodiagnosis for syphilis, many totally unsuspected cases of syphilitic disease are being brought to light Most of these cases doubtless are the result of genital infection in which the initial lesion was so insignificant that it wholly escaped observation by the patient It is reasonable to suppose, however, that many arise from extragenital infections of which the patient is wholly innocent as well as ignorant until some late manifestation of the disease appears

This patient also illustrates the falsity of Colles' law that, owing to a sort of protective vaccination through the placenta with the specific virus a woman who bears a syphilitic child enjoys perfect immunity, and this in the absence of all signs of infection If the Wassermann test had not been performed on the patient's wife, she would have seemed to escape infection Trinchese,[1] after declaring the fallacy of both Profeta's and Colles' laws, says that there is no paternal transmission of syphilis, and hence the fetus does not generate immunizing substances and the placenta does not permit the passage of immunizing substances from the maternal to the fetal tissues A syphilitic mother can have a child clinically free from syphilis and with a negative Wassermann, or the Wassermann may be positive, the child may have symptoms of syphilis and a positive Wassermann, or it may have symptoms and a negative Wassermann

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[10] Despaigne Etudes sur la paralysie faciale periphérique, Thèse de Paris, 1888

REPORT OF CASE

T J H, physician, Celtic, aged 29, whose parents were living, in good health, and who had two brothers and one sister, all of whom were in good health, had measles as a child, but otherwise no illness There was no history of any venereal infection The patient was married in 1910 The wife, aged 29, had five brothers and sisters, and these, as well as both parents, were all living and well She had had no serious illness, and there was no history of venereal infection A healthy child was born in 1911

In the spring of 1912, while engaged in an active surgical practice, the patient developed what he supposed to be a felon of his finger Another physician examined the finger and also pronounced it a felon The sore was a troublesome one, and finally healed, after about six months of local treatment The following autumn there was a mild epidemic of dengue in the town in which the patient was residing, and the patient believed that he had an attack He suffered for several days with pains in the bones and joints, and had an eruption over the body resembling that usually seen in dengue Following this attack the patient suffered a good deal from insomnia, and he lost weight, but continued in active practice

Mrs H had been perfectly well during the entire course of her husband's illness In November, 1912, in the eighth month of pregnancy, her older child kicked her in the abdomen From that moment all sensation of quickening ceased, and ten days later a macerated fetus was born The death of the fetus was attributed to injury In 1913 she noted some tendency to alopecia, but this was transient In October, 1914, a healthy male child was born at term Labor was uncomplicated The child appeared perfectly normal In the fifth week the child was brought to the hospital with the history that it had had a slight cold in the head for several days Examination showed the infant to be moribund There was a scaly eruption about the finger nails, and the liver and spleen were enormously enlarged After about five hours the child expired

A partial necropsy was performed, and portions of the spleen and liver were removed Syphilis being suspected, the father was minutely questioned, but denied venereal infection Examination showed the scar on the finger from the felon The postcervical glands were enlarged Wassermann tests were then made on the patient, his wife and oldest child Those of the parents were both positive That of the child, who was evidently born before infection in 1911, was absolutely negative A vigorous course of treatment with salvarsan was immediately instituted in both parents, in whom the serum reaction ultimately became negative Histologic examination was made of tissues removed from the dead infant The spleen showed many spirochetes in the walls of some of the trabeculae and blood vessels The liver showed marked follicular cirrhosis with fatty change Spirochetes could be demonstrated in the liver substance

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[1] Trinchese, J Infektions und Immunitätsgesetze bei materner und fötaler Lues, Deutsch med Wchnschr, 1915, xli, No 19, abstr, The Journal A M A, June 19, 1915, p 2102

INFECTION OF OVARIAN DERMOID CYST WITH TYPHOID BACILLUS

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Many cases have been reported of the unusual location of the typhoid bacillus Thus, the bacilli have been found in abscesses of the liver and spleen, in subphrenic abscesses, and in sacculated and general peritonitis, osteomyelitis, periostitis, etc The following case, if not unique, seems sufficiently rare to justify recording it Besides the unusual location of the typhoid bacillus, the definite history of a recent attack of typhoid fever is to be noted, and also the quantity of pus produced in which no other bacteria except the typhoid bacilli were found

Miss M S, aged 21, schoolteacher, a native of this country, entered the New Haven Hospital, May 21, 1914, on account of enlargement of the lower part of the abdomen About April 21 she first noticed a mass in the lower part of the abdomen, which rapidly enlarged but was accompanied by no pain Last Christmas she was ill, and January 12 had a positive Widal reaction She had a typical case of typhoid fever, and was out of bed by March 1 Just previous to this attack, her brother also had typhoid fever with a positive Widal reaction and no complications

Physical examination showed a large tumor in the lower part of the abdomen, quite firm and movable, lying on the left side Otherwise examination was negative

Operation was performed by Dr Ramsay A large ovarian cyst on the left side was aspirated, and about 2 quarts of thin pus removed A few strands of hair were attached to the cannula on removal The tumor was ligated at its pedicle and removed

On bacteriologic examination, a smear showed a gram-negative bacillus The growth showed a gram-negative motile bacillus in pure culture which did not produce gas in sugar mediums, did not liquefy gelatin, and did not coagulate milk A bouillon culture was agglutinated by a known typhoid serum in as high a dilution as 1 1,600 A rabbit immunized against this organism by injections, at first of a killed bouillon culture, and then with a living culture, gave a serum which agglutinated a known typhoid bacillus in dilutions of 1 100 and 1 200 Higher dilutions were not made The organism was diagnosed as the *Bacillus typhosus*

Pathologic examination of the cyst in gross after fixation revealed a growth 15 by 15 by 11 cm in largest diameters The fallopian tube was attached on one side when the cyst was opened, a quantity of grayish liquid, containing a fatlike substance such as is commonly found in dermoid cysts, came out, and masses of this fatty material containing hairs were removed At one portion where the wall was thickest, there was a tuft of hair growing from the wall At another portion there was a short nipple-like projection somewhat calcified Microscopic examination revealed an infected ovarian cyst

The patient made an uneventful recovery, and has had no further complications

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Causes of Death of Physicians in Norway—I Kobro has recently published a statistical study of the morbidity and mortality of Norwegian physicians from 1900 to 1908 The average age at death of 1,015 physicians during this period was 55 8 years The age at graduation is usually 27 The mortality among physicians was higher than in other classes of society below the age of 70 By decades it was 17 2, in contrast with 7 8 per cent. of those outside the profession in the thirties, 19 1 and 8 69, respectively, in the forties, 17 2 and 12 22 in the fifties, 21 25 and 19 29 in the sixties, but over 80 it was 7 65 to 24 6 per cent, respectively

New Instruments and Suggestions

A RAPID METHOD OF COUNTING LIVING BACTERIA IN MILK AND OTHER RICHLY SEEDED MATERIALS*

William Dodge Frost, Ph.D., Dr.P H, Madison, Wis
Associate Professor of Agricultural Bacteriology, University of Wisconsin

In a preliminary note on this subject (*Science*, Aug 20, 1915, p 255), I called attention to a new method of milk analysis by which it is possible to grow the bacteria in milk into colonies in the course of a few hours These colonies are big enough and sufficiently distinct to count under the compound microscope In order to bring them out more distinctly, they are stained before counting Practical tests have been made and seem to show that this method gives results that are quite uniform and satisfactory when compared with those obtained by the ordinary or standard plate method In this paper it is proposed to discuss this method in detail

The impatience which commercial milk men often express because they are obliged to wait so long for the results of bacteriologic milk analyses led me to think seriously of the matter of quicker methods A study of the Stewart-Slack and Breed methods of direct microscopic examination gave me the idea that they are not entirely satisfactory The results obtained from the direct microscopic examination and the ordinary plate methods differ so widely principally because of the fact that some of the bacteria which show up under the microscope and are counted are dead, and hence not able to produce colonies This conclusion is borne out by Conn's recent article (*Public Health Reports*, Aug 13, 1915, p 2349) Furthermore neither can be used with pasteurized milk

The present method was conceived and worked out during the fall of 1913 At this time I had the voluntary help of Miss Lucy Wells Fox

Briefly stated this method is as follows One-twentieth c.c of milk is mixed with standard nutrient agar and spread over a definite area of a sterile glass slide. When the agar is hard this little plate culture is put in the incubator for about six hours under conditions which prevent evaporation It is then dried, given a preliminary treatment to prevent the agar from firmly binding the stain, stained, decolorized and cleared When this dried and stained plate culture is viewed under the microscope, the little colonies are definitely stained and appear highly colored on a colorless or slightly colored background These colonies can be readily counted and the number of bacteria per cubic centimeter calculated

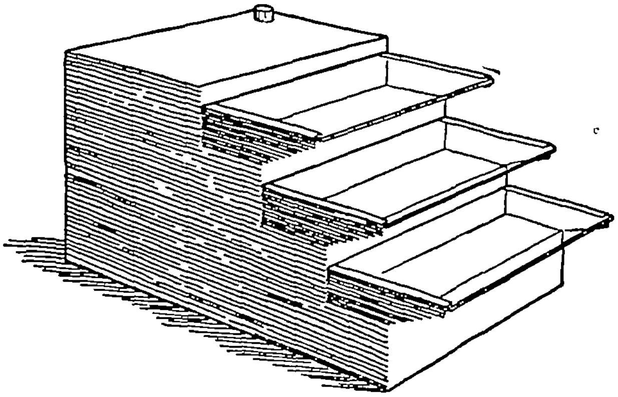

Fig 1—Warm box or water bath, kept at 45 C, used to keep the little plates warm while the agar is being spread

METHOD IN DETAIL

Preparing the Glass Slides—The little plates are made on ordinary microscopic glass slides (2 5 by 7 5 cm) These are carefully cleaned and are then ruled with a grease pencil so that a square surface, over the center of the slide, is surrounded by a greased line The included area is 4 sq cm The ruling is best done by having a wooden or cardboard frame for the slide and some arrangement, as brads, to hold a straight edge in place These ruled slides are then sterilized by passing them through a gas flame, and then they are placed on a warm box (45 C, 113 F) provided with an overhanging top to protect them from the dust (Fig 1)

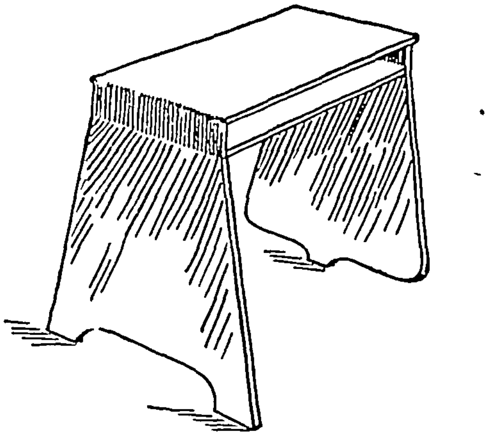

Fig 2—Nivellating apparatus for setting agar on little plates in a film of uniform thickness

Making Plates—A few tubes of ordinary nutrient agar are then melted and placed in a water bath at 45 C to cool Some sterile plugged test tubes are also put in this water bath to warm up (one for each sample of milk to be tested) The milk sample to be tested is then thoroughly shaken, and 1 c c. is transferred to one of the warm sterile test tubes To this is added an equal amount (1 c c.) of the melted agar The milk and agar are thoroughly mixed, care being taken to prevent the agar from cooling below 40 C (104 F) It is best to warm it up frequently by putting it in the 45 C water bath

One-tenth c c of the milk and agar mixture is then (by means of a sterile pipet) transferred to a warm glass slide and spread as quickly and evenly as possible over the marked square This can be readily done with the help of the pipet while the slide is on the warm plate (Fig 1) The agar is allowed to set firmly by placing it on a level surface under cover for a few moments (Fig 2) This makes a little plate culture containing 0 05 c c of milk.

When the milk being examined is supposed to contain more than a million bacteria per cubic centimeter, it should be diluted with sterile water or sterile milk before it is mixed with the agar The dilution may be 1 2 or up to 1 10 This would make the final dilution as much as 1 200

Incubation—This is accomplished by placing the little plates in an incubator in a specially prepared cabinet (Fig 3), or moist chamber with a layer of water in the bottom to maintain a saturated atmosphere. (A Petri dish may be used for a few slides) The incubation temperature is 37 C (98 6 F), and the time varies, but, where possible, five or six hours should be allowed For market and other milks kept in a warm place for some time before being plated, three or four hours may be sufficient In the case of recently pasteurized or very good milks, the time will probably need to be lengthened to eight or even twelve hours

Drying of Plates—When the colonies are sufficiently large, the slides are dried This should be done carefully If they dry too fast or too long, the agar film cracks They dry well in an incubator or over a steam radiator if protected from the iron by a piece of wood or glass At this temperature the time required is about ten minutes

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* Read at the meetings of the Society of American Bacteriologists Urbana Ill December 1915

Staining—The dried slides are (1) fixed in the flame, (2) put into a 10 per cent acetic acid solution in 95 per cent alcohol in a staining jar for one minute, (3) put into Loeffler's methylene blue, dilution 1 4, for three minutes, (4) decolorized in 95 per cent alcohol for a few seconds or until the background is a pale blue and the dark blue colonies stand out prominently, (5) dried without washing

COUNTING COLONIES

The slides are examined under the microscope in the usual way For the purpose of counting the colonies, the preparation can be examined dry with the lower powers of the microscope, but if it is desired to study the structure of the colonies or count with a high dry lens, it will be necessary and it is always best to use a mounting medium and a cover glass Cedar oil serves quite well and in that case the cover glass can be removed for use with the oil immersion, or, of *course, the mounting can be done in balsam in the usual way* A microscopic examination of these plates reveals colonies of considerable size and deeply stained in a light blue field It is surprising to one who has never seen them before how large the colonies may become in the course of a few hours The staining process should be so regulated that the bacteria in the colonies will be as distinctly stained as possible and yet not have the field too deep a blue

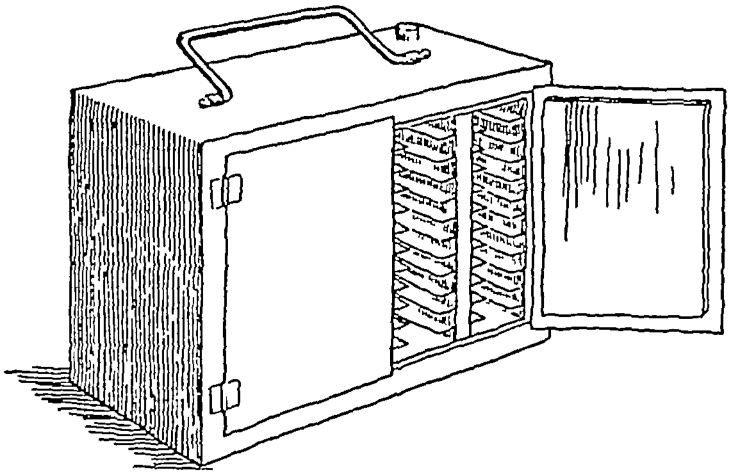


Fig 3 —Incubating cabinet Little plates are kept moist during incubation Cabinet is put in incubator

If the dilution has been properly chosen, these little plates will show from two or three to fifty colonies for each microscopic field when the low power is used (two-thirds inch or *16 mm lens*) With a medium sized eyepiece (3) the *magnification* is a little less than 100 diameters This has been found a satisfactory magnification to use If higher powers are used, it is difficult, in some milks at least, to distinguish colonies from clumps of bacteria that have not grown The count is usually higher with the high powers of the microscope

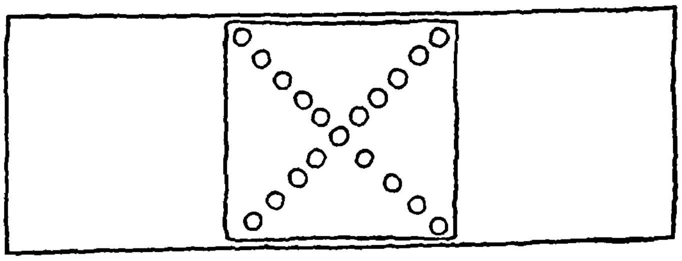


Fig 4 —Glass slide with little plate on it The series of circles indicate the microscopic fields which it is desirable to count in order to get a fair idea of the number of colonies on the slide

Whatever the magnification used, the method of counting is practically the same A good light is needed The whole plate must be gone over in a systematic way, and the fields selected for counting must be picked out mechanically and not by choice in order to avoid the factor of personal equation as much as possible A mechanical stage is therefore desirable, and it is suggested that at least twenty fields on each plate be counted We usually count in two diagonal rows as indicated in the diagram (Fig 4) In counting, a register is desirable It is also important to count only one half of the colonies that touch *the edge of the field*, otherwise the area of the field would actually be considerably larger than that computed Of the colonies in a field bisected by *the margain of that field*, we count only those on the right hand half (Fig 5) Only those colonies are counted which touch the edge where the double line is drawn

CALCULATING THE NUMBER OF BACTERIA PER CUBIC CENTIMETER

The number of bacteria per cubic centimeter of milk can be easily calculated by multiplying the number of colonies in an average microscopic field by the number of *times the* area of this field is contained in 400 sq mm (4 sq cm), or the area of the little plates times the dilution of the milk used

The area of the microscopic field, for any definite combination of lenses and tube length, is a constant, and can be *determined by the formula* $\text{Area} = \pi R$ *The radius of the* field can be measured by means of a stage micrometer We found, for example, that a Leitz microscope, objective 3 and ocular 3, the area of the field was approximately 2 sq mm With the one-fourth inch objective (B & L) and No 3 ocular, the area of the field was approximately 0.2 sq mm, and with the same ocular but a one-twelfth inch oil immersion objective, the area was 0 02 sq mm In order to keep this factor an integer or with as many ciphers as possible, it is desirable to vary *the* tube *length of the* microscope In this case it is, of course, essential to be sure that the tube is pulled out to the proper length whenever the counts are made

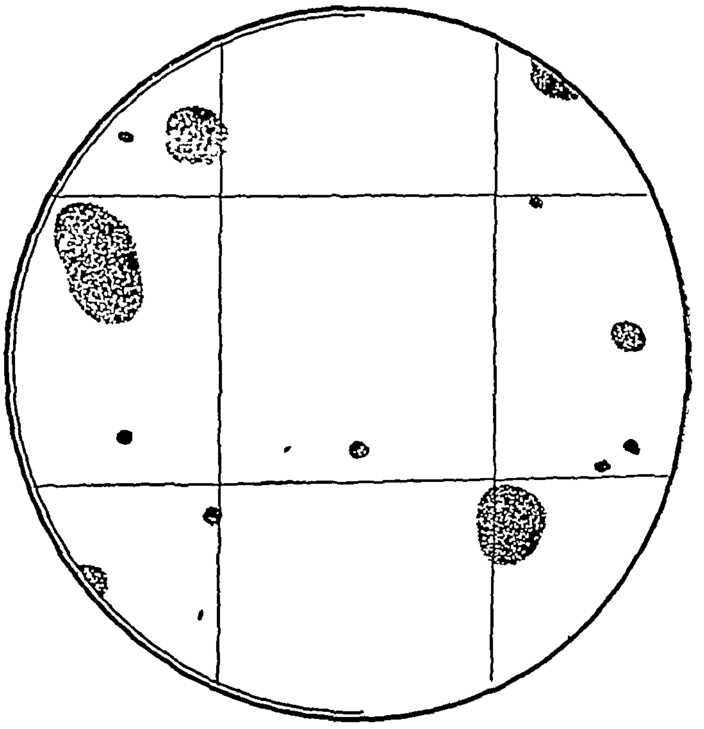


Fig 5 —A microscopic field showing the little colonies from milk in a plate five hours old There are twelve colonies (the thirteenth is not counted because it is bisected by the margin of the field and only one half of such are counted)

If the microscopic factor is known, then this *formula* is applicable

$$\frac{\text{Number of colonies counted}}{\text{Number of fields counted}} \times \text{Reciprocal of dilution of the milk} \times \text{Microscope factor} = \text{Number of bacteria per cubic centimeter}$$

For example

$$\frac{600}{20} \times 20 \times 200 = \frac{2,400,000}{20} = 120,000 \text{ bacteria per cubic centimeter}$$

where
600 is the number of colonies counted
20 the number of fields counted
20 represents the dilution, that is, *1 20*
200 the microscope factor

AN EFFICIENT AND INEXPENSIVE FOAMING INHIBITOR*

ADOLPH BERNHARD, B.S., NEW YORK

In seeking an economical substitute for caprylic alcohol as a foaming inhibitor during aeration in the determination of ammonia in urine, blood, etc., we have found that kerosene and amyl alcohol used separately are unreliable, especially when rapid suction is employed. A mixture of equal parts of kerosene and amyl alcohol is as efficient as caprylic alcohol, and can be employed with safety even with strong suction. Greater quantities of the mixture must be used, from 2 to 4 c.c. being required, whereas only a few drops of caprylic alcohol suffice. Notwithstanding this fact, the cheapness of the constituents of this mixture more than counterbalance the greater amount necessary.

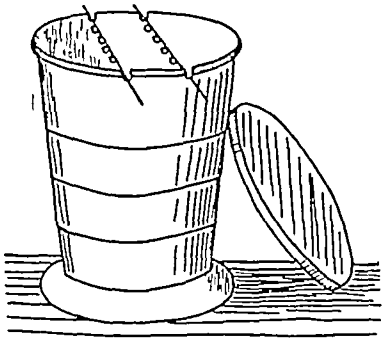
We make this note in hopes it may aid other workers in this field who have been embarrassed by the difficulty in obtaining caprylic alcohol.

A SIMPLE METHOD FOR ESTIMATING THE COAGULATION TIME OF BLOOD

MARCUS WARD LYON, JR., PH.D., WASHINGTON, D. C.

The query of X. Y. Z. (THE JOURNAL, Jan. 22, 1916, p. 298), regarding a simple method of estimating the coagulation time of the blood calls to mind the simple and cheap modification of the Biffi-Brooks apparatus, illustrated herewith, which I fixed up some years ago and used in teaching clinical laboratory methods.

It consists of a collapsible aluminum cup with a cover, with two pairs of notches cut with a saw opposite one another in the top rim of the cup and two pieces of platinum wire, each with four loops.



Apparatus for estimating the coagulation time of the blood.

In use the cup is filled with water warmed to 37 C. (98.6 F.) to within about 1 centimeter of the top. The loops of the wire are quickly touched in succession to the blood from a freely flowing puncture, and the wires suspended in the notches at the top of the cup and the cover gently laid over. At the expiration of two or three minutes the cover is removed and one loopful of blood is immersed in the water. The wire and cover are quickly replaced and the same procedure gone through with at half or one minute intervals. By noting the lapse of time from the start until a drop fails to wash out, one easily estimates the coagulation time of the blood.

In the hands of students it worked exceedingly well, and when used against the Boggs-Russell-Brodie apparatus gave approximately the same results. When not in use the wires are gently bent and placed inside the collapsed cup. As near as I can remember, the cup cost 10 and the wire 50 cents.

George Washington University.

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* From the Laboratory of the German Hospital and Dispensary in the City of New York.

"Preventive Medicine."—To lengthen the interval between birth and death has been the aim of the medical profession since the days of Esculapius, but within a generation, in fact since the days of Pasteur, has arisen a new school which is destined to crowd the healers for place—the school wrongfully termed "preventive medicine," wrongfully termed because "prevention" requires no medicine, its use for the individual has passed when medicine is required, except in controlling the relation of the individual to society.—William J. V. Deacon, *Am. Jour. Pub. Health.*

Therapeutics

SCIATIC NEURALGIA AND SCIATIC NEURITIS

While the sciatic nerve or its branches may transmit painful sensations, the nerve itself may not always be affected, as pathologic conditions of the hip joint (arthritis, tuberculosis or tumor growth, as sarcoma) may cause pain down the sciatic nerve.

As with backache,[1] a patient who has sciatic pain should be carefully examined to determine, if possible, the cause. True sciatica is generally a perineuritis, from which this nerve suffers more than almost any other nerve of the body. Sciatica may be either acute or chronic. In the acute form it is perhaps the cause of more continuous and repeated suffering than almost any other curable disturbance.

Hunt[2] offers a classification of sciatica which suggests etiologic treatment. Unless the cause of the pain is removed, the nerve will continue to cause symptoms. According to this classification, the causes of neuritis are:

1. Intrapelvic disease, such as specific exudates within the pelvis, in venous congestion, pressure from a pregnant uterus, new growths, and a loaded rectum.
2. Constitutional states, such as syphilis, alcoholism, etc.
3. Damage to the nerve trunk from injury or exposure to cold.
4. Damage to the sacro-iliac joint.

The most frequent cause of sciatica in women is pelvic disturbance and pelvic pressure. In men a rheumatic and gouty tendency is frequently an associated cause, and exposure to cold seems to be a frequent exciting cause. A possibly important factor in the development of sciatica is the compression of the nerve against the tuberosity of the ischium by asymmetrical sitting on a hard seat.

The disturbance of equilibrium caused by a weakened plantar arch or other foot disturbance must be considered, as well as the possibility of a heavy patient lying in bed too long on his side, and thus causing pressure in the region of the hip. The springs of the bed and mattress, with extra pillows and cushions if necessary, should be so arranged as to relieve all possible continued injury to the sciatic nerve.

When the cause of the disturbance is considered to be a general one, a possible focus of infection should be sought. A frequent cause in adults is infection in and around teeth, or possibly in a tonsil.

Besides syphilis and alcohol as causes of sciatica, diabetes and malarial poisoning should be considered. Impaired circulation in the legs, from varicose veins or from insufficiency of the heart, may perpetuate sciatica after it has once started, and treatment in such instances must be directed toward improving the circulation.

SYMPTOMS

It is hardly necessary to refer to the symptoms of neuritis of the sciatic nerve. Often a patient can map out the course of the nerve by describing where he feels pain, and if not pain, where he feels twinges or peculiar sensations of irritation. There may be, after some days of a real inflammation of the nerve trunk, regions of paresthesia in different parts of the leg supplied by branches of this nerve, and still later there may be impaired mobility of some muscles The pain may be so severe as to be tearing or boring in character, and there may be attacks of cramps or contractions of one or more muscles causing very intense pain There may be some reddening of the skin along the course of the nerve, local elevation of temperature, and rarely some edematous symptoms The electric excitability may be increased at first, and later diminished The patellar reflexes are normal at first, and later may be diminished Occasionally a herpes may occur, there may be some local sweating, showing trophic disturbance In chronic sciatic pain, the pain may become almost a habit or a condition expected by the patient, so that the general neurotic condition must be treated more than the local pain

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[1] Backache, Therapeutics, THE JOURNAL A. M. A., March 4, 1916, p. 740.

[2] Hunt: Med. Rec., New York, 1913, lxxxiii, 1153.

GENERAL TREATMENT

Besides removing the cause of sciatica, if such is possible, the general treatment is important The diet should be modified according to the general condition In some instances the meat should be removed from the diet In other instances it should not be withdrawn, in fact, protein should be pushed and nutrition increased Constipation should always be prevented The treatment may be started with a brisk purge, as castor oil or calomel The bowels should be moved daily, with salines if there is plethora, overweight and a good heart, and with vegetable laxatives if the patient is underweight, anemic, or with poor circulation

Rest of this nerve is of primary importance, even if there is only a neuralgic condition, that is, an irritation without a neuritis or perineuritis, and it is imperative when there is a neuritis or perineuritis A neurotic habit of the individual should always be noted If such is present, this pain, like any other, will be harder to combat, and the main treatment should be toward the general condition, whether neurasthenic, hysteric or plainly neurotic Like any other painful nerve, it must be kept warm Warmth is one of the most important elements of local treatment

In acute inflammations of this nerve the pain is so excessive that generally morphin must be given But before morphin is resorted to, the leg should be immobilized and sometimes made rigid with a long splint It is generally best not to give atropin with morphin, as atropin acts only on the peripheral endings of nerves, and in this case the nerve trunk is in trouble, and the atropin will combat somewhat the sedative action of the morphin Also the morphin may have to be repeated more frequently than it would be wise to repeat the atropin When the pain is not sufficiently severe to require morphin, antipyrin will sometimes act as a valuable sedative, also novaspirin, especially if the patient is rheumatic

LOCAL TREATMENT

Besides the local treatment already suggested, dry cupping and cauterizing, and at times blistering along the course of the nerve, may be not only of temporary but also of permanent benefit Sometimes the d'Arsonval high frequency current is of benefit in subacute and chronic cases Sooner or later, gentle massage is of benefit

When this nerve is somewhat stretched and at rest, especially when the leg is surrounded by dry heat, as by hot sand bags or other methods of applying heat, excruciating pain may entirely cease Such patients are fortunate, as narcotics need not be given

If there is a rheumatic condition present, large doses of salicylates are of benefit Alkalies are frequently of service, such as potassium citrate in 2 gram doses, in wintergreen water, given three or four times in twenty-four hours If there is a nervous irritability and considerable cerebral irritation, bromids are of value, but they should be soon discontinued, as they interfere with nutrition and are very depressant, and calcium should be substituted

Sometimes warmth is well applied to this nerve by a cradle containing electric lamps, and the leg is subjected to this kind of heat and the resulting local sweating once or twice a day for from fifteen minutes to half an hour

High frequency currents have been applied to this painful nerve, sometimes with good results, but often electricity in any form is not well tolerated

Ethyl chlorid spray along the course of the nerve or in different painful regions of the nerve has been reported to be successful in modifying the pain Epinephrin ointments have been gently rubbed into the skin along the course of the nerve with some success

Salt solutions, cocain solutions and beta-eucain solutions have been injected around the nerve sheath in prolonged acute and subacute cases with considerable success The injection treatment with sterile water or sterile physiologic saline solution is an old treatment, and is recently being revived This treatment is not advised in every case of sciatic pain, as many individuals are benefited and recover from ordinary local and constitutional treatment, but when the inflammation and pain persists, it is perhaps the most successful treatment The technic is as follows

The patient should lie on the abdomen, on a table, with the legs fully extended A support is placed under the lower part of the abdomen to relax the gluteal muscles A line is drawn from the sacrococcygeal articulation to the posterior external border of the great trochanter, and at the juncture of the inner third and outer two thirds of this line is found the spine of the ischium One inch to the outer side of this point is the point of puncture Paint the skin with iodin A syringe with a slip tip which allows the needle, to fit the barrel directly is preferable The needle should be of steel, 12 cm long with a caliber of 2 mm, and with a sharp point protected by a dull tipped stylet projecting beyond the point of the needle Before penetrating the skin and subcutaneous tissue, the stylet is withdrawn beyond the cutting edge It is then replaced, and the needle pushed in perpendicularly The sciatic nerve is usually reached at a depth ranging from 6 to 12 cm The patient may feel either a sharp pain radiating from the point of contact to the popliteal space or down to the foot, or a sharp pain in the corresponding heel, or there may occur a jerking movement of the leg, or a sudden twitch of the calf muscles The syringe is filled with sterile physiologic saline solution at a temperature of from 95 to 100 F The stylet is removed and the syringe slipped on to the needle Eighty to 100 c c of the fluid is rapidly injected The needle is quickly withdrawn, the iodin washed off with alcohol, and the point of puncture covered The patient should remain in bed for at least twenty-four hours The pain generally almost entirely disappears in twenty-four hours, although there may be some pain down the peroneal nerve A second injection, when necessary, should not be given ordinarily until a week after the first one When the patient feels numbness and heaviness in the extremity, the pain from the injection ceases. The object aimed at is to infiltrate the tissue around the nerve. The nerve sheath should not be punctured, as a large amount of fluid forced into the trunk of the nerve causes paralysis and traumatic neuritis.

Beta-eucain has been used as an infiltration injection in strength of 0.1 per cent. solution and 100 c.c. in bulk. Cocain has been used in 1.5 per cent., 2 c.c. in bulk, followed by 100 c.c. of physiologic saline solution.

Injections of small bulk into the sheath of the sciatic nerve, called nerve blocking, have been done frequently in the severe forms of sciatica. A hypodermic syringe full of plain, cold water has been used, also cocain solutions, sometimes morphin solutions, and sometimes alcohol.

Whatever injection treatment is done, the treatment should be considered radical and should be done by one who has become proficient in this operative therapy, as sometimes uncomfortable symptoms are developed.

The injection of alcohol has been shown by Cadwalader[3] to be unjustifiable, as alcohol destroys nerve tissue. He found that salt solution injection into the sciatic nerve did not cause any degeneration, while strong alcoholic solutions caused destruction of nerve tissue.

Stretching the sciatic nerve has been recommended for many years, and is sometimes of great value in relieving pain, especially if the nerve and leg are then put at rest, allowing the inflammation to heal. This may be done nonoperatively, by extending the leg in various directions and thus stretching the nerve, or it has been done operatively by an incision over the nerve at its exit from the pelvis, and the muscles pushed aside and the nerve picked up and stretched. This is a rather severe therapeutic measure. The method is described by Nannini.[4]

PAIN IN THE FEET

This troublesome subject has recently been discussed by Frauenthal.[5] He premises the diagnosis of the cause of pain in the foot by the statement that when the pain comes on acutely it is due either to an injury or to an infection; when the pain comes on gradually, there is some relaxation of ligaments or supporting structures. He deplores the promiscuous use of foot plates, some of these metal supports doing more harm than good. A proper fitting shoe is the first essential to comfort of the foot. An arch may not be broken or may not have fallen, and may not need a support. All it needs is a proper adjustment of the heel to the foot tread and a proper arch to the shoe. Also, pain in the forward part of the foot is often not caused by a weakened arch, and an arch support will not correct pain in other weakened joints or ligaments. On the other hand, when the arch has fallen or has become weak, and there is a rotation of the ankle inward, besides a proper fitting shoe a plate or support that fits the foot and corrects the deformity may and will often entirely relieve the pain in the foot and the associated pain of the leg and back. Various exercises of the foot muscles may strengthen the arch and later allow of the removal of this artificial support.

Barnes[6] of Washington calls attention to an over-overlooked cause of sore feet, and especially to the overlooked condition causing a painful ball of the foot. Pain and tenderness in this region of the foot has become much more common than formerly on account of the craze for dancing. He finds that a few anatomists call attention to sesamoid bones as being normal in this region of the foot and especially likely to be present at the metatarsophalangeal joint of the great toe, namely, the ball of the foot.

By a series of roentgenograms of normal feet and feet that are painful in this region, Barnes finds that the sesamoid bone is part of Nature's method of protecting this joint and causing normal tread and normal support. He also finds that this sesamoid bone may be fractured or may become injured and not only cause pain from its own disturbance, but cause pain in the joint above it. He orders shoes made with a depression in this region of the sole, and causes comfort, and cures his patients of their disability. In acute injuries of this region nothing will be of so much benefit as rest.

At times irritation or injury may cause an exostosis to occur in this region, which of course can be cured only by surgery.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

SAUBERMANN RADIUM EMANATION ACTIVATOR.—An apparatus for the production of radioactive drinking water by the action of radium sulphate.

Actions, Uses and Dosage.—See general article on radium, New and Nonofficial Remedies, 1916, p. 264.

Radium Heil Gesellschaft, Berlin, Germany (Radium Limited, U. S. A., New York). No U. S. patent or trademark.

Saubermann Radium Emanation Activator 5 000 Mache Units.—An apparatus which imparts about 1.8 microcurie (5 000 Mache units) to about 500 Cc. water daily. Each apparatus is accompanied by a statement of its daily capacity and efficiency.

Saubermann Radium Emanation Activator 10 000 Mache Units.—An apparatus which imparts about 3.6 microcurie (10 000 Mache units) to about 500 Cc. water daily. Each apparatus is accompanied by a statement of its daily capacity and efficiency.

Saubermann Radium Emanation Activator 20 000 Mache Units.—An apparatus which imparts about 7.2 microcurie (20 000 Mache units) to about 500 Cc. water daily. Each apparatus is accompanied by a statement of its daily capacity and efficiency.

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A test made for the Council demonstrated that during the impregnation of the water with radium emanation for twenty-four hours, 0.035 *microgram* of radium element was dissolved in each 500 Cc.

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[3] Cadwalader, W. B.: Injection of Alcoholic Solutions of Different Strengths into Peripheral Nerves, THE JOURNAL A. M. A., June 5, 1915, p. 1892.

[4] Nannini: Riforma med., 1914, xxx, 813.

[5] Frauenthal: Painful Feet, THE JOURNAL A. M. A., Nov. 27, 1915, p. 1897.

[6] Barnes, N. P.: Sesamoids of Flexor Brevis Hallucis, New York Med. Jour., 1915, cii, 940; abstr. THE JOURNAL A. M. A., Nov. 20, 1915, p. 1852.

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SATURDAY, MARCH 18, 1916

FURTHER OBSERVATIONS ON THE CAUSE OF RAT-BITE FEVER

In a review of the various alleged etiologic factors in relation to rat-bite fever, or sokodu, which has long been recognized in Japan as a definite febrile disease, was remarked in a recent number of The Journal[1] that new cases will undoubtedly soon be brought to light in greater number This is the familiar consequence of the publicity of education It was also pointed out that renewed study of the disease, when fresh opportunities are discovered, would be likely to settle the debated question as to whether the causative agent is a spirochete, as some have asserted, or some other form of detrimental organism

Since our comment on the subject, further contributions have appeared Investigators[2] at the Imperial Japanese Institute for Infectious Diseases, in Tokyo, have identified spirochetes in preparations from two well defined cases The organism is described as somewhat larger than the *Spirochaeta pallida,* but smaller than the *Spirochaetae duttoni* and *obermeieri* One of the patients was treated with mercury, and the other with salvarsan Both recovered In this connection the Japanese investigators recalled the fact that in recurrent fever, one of the spirochetal diseases which shows a temperature curve similar to that of rat-bite fever, salvarsan has proved effective, in syphilis likewise, which also resembles rat-bite fever in the swelling of the lymph glands and in skin eruptions, there is improvement with salvarsan or mercury On the basis of these analogies as well as of the microscopic findings, they suggest, with due reserve, that the newly discovered spirochete is in all probability the cause of rat-bite fever

On the other hand, Blake,[3] of the Peter Bent Brigham Hospital in Boston, has lately described a case of rat-bite fever which terminated fatally and furnished an opportunity at necropsy to add to the almost unknown pathologic anatomy of the disease The clinical picture which justified the diagnosis was typical of the recognized syndrome of the disease There was a history of a rat bite, a latent incubation period, nonsuppurative lymphangitis, high fever ushered in by a severe chill, severe generalized muscular pain, stuporous condition, and a characteristic bluish-red macular exanthem From the blood of this patient during life Blake isolated a streptothrix in pure culture and apparently identified it with *Streptothrix muris ratti* first described by Schottmuller,[4] in 1914, after its isolation by him in eight consecutive blood cultures taken during a period of two months in a case of rat-bite fever

Although successful animal inoculations have not yet fulfilled the strict requirements for the demonstration of the unquestioned etiologic relation of the streptothrix of Schottmuller to the disease, Blake is inclined to emphasize the high probability of this causative factor Not only did he isolate the organism, but he succeeded further in showing the development of a powerful agglutinin in the patient's blood serum for the streptothrix Furthermore, the necropsy revealed an ulcerative endocarditis caused by a streptothrix, and the presence of a morphologically similar organism in the sections of the mitral vegetation in the absence of other demonstrable organisms is taken as strong presumptive evidence that the same organism was the cause of the endocarditis

In view of the fact that only one necropsy has previously been recorded in the literature of rat-bite fever, it is of interest to note the character and extent of the lesions here found In addition to the striking streptothrix septicemia with localization of the organism in the mitral valve, producing an acute ulcerative endocarditis, there were the infarcts of the spleen and kidneys as a natural consequence The subacute lesions of the myocardium, liver, suprarenals and kidneys, glomerular and interstitial, were all of a similar nature, consisting of areas infiltrated with leukocytes, lymphocytes, plasma and endothelial cells with varying degrees of degeneration of the normal cells of the affected area It may be assumed that these lesions were toxic in origin, since the presence of the streptothrix itself was not demonstrated in them

Commenting on the facts at present known in reference to rat-bite fever, with the indications of similarity in symptomatology to cases occurring in Asia, Europe and America, Blake[3] remarks that it no longer appears necessary to consider that cases arising in this country are due to the bites of rats that have been imported from Japan The greater frequency of the disease in Japan than elsewhere is probably due to the housing conditions and habits of the people, resulting in more frequent occurrence of rat bites So long as some uncertainty remains as to the actual etiology, the scientific basis for rational treatment must remain in doubt Meanwhile salvarsan and similar chemotherapy deserve continued trial on the basis of clinical experience, if nothing else

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[1] The Cause of Rat Bite Fever, editorial, The Journal A. M. A., Oct 9, 1915, p 1285

[2] Futaki, K, Takaki, F, Taniguchi, T, and Osumi, S The Cause of Rat Bite Fever, Jour Exper Med, 1916, xxiii, 249

[3] Blake, F G The Etiology of Rat Bite Fever, Jour Exper Med, 1916, xxiii, 39

[4] Schottmüller, H Dermat Wchnschr, 1914, lviii, Supplement 77

MUMPS

In view of the succession of brilliant discoveries which have disclosed the etiologic agents in the production of many infectious diseases, thereby paving the way for the relief and control of the harm instigated by them, there is something tantalizing in the limitations of progress which have been experienced in other instances The infectious diseases, indeed, still offer abundant opportunities for investigation The role of bacteria as a cause of several has long been clearly understood The responsibility of protozoa for certain other pathologic states is now better appreciated For a considerable number of still different diseases there is as yet no certainty either as to the identity of the organism that causes them, or even as to whether the causative agent is really of the germinal type Some undoubted infections still defy all search as to the nature of the etiologic factor, and in the case of some of these, the fact that the virus retains its infectious property, even after being passed through a fine porcelain filter, gives ground for the hypothesis that the germs here present are too minute to be recognized in the usual way with the present powers of our microscopes Here one must deal with the so-called filterable viruses

Mumps is one of the highly infectious diseases, its etiology is unknown, it is always more or less present, in cities, at least, and it is liable to be epidemic at certain seasons of the year A number of micro-organisms have been described in the past as the presumable causative agents, but every serious attempt to apply to these bacteria the criteria and demonstrations which are called for, before the relation of cause and effect in disease can be regarded as proved, has failed In 1908 Granata[1] concluded that the virus of mumps may be of the filterable type However, neither he nor Nicolle and Conseil,[2] who injected bacteria-free fluid from the parotids in cases of human parotitis and obtained in animals symptoms somewhat comparable with those of mumps, really succeeded in reproducing the disease satisfactorily Not a little interest must center, therefore, in the newest experiments in this field by Dr Martha Wollstein[3] at the Rockefeller Institute for Medical Research She has succeeded in reproducing the chief organic lesions of parotitis in animals by means of filtered extracts of saliva derived from persons suffering from acute parotitis Thus injections, into cats, of bacteria-free filtrates of the saliva have been capable of setting up a series of pathologic changes in the parotids and testicles, expressed by fever, leukocytosis, tenderness and swelling attended by definite histologic alterations There is a greatly added significance in the further fact that the effect of the injection is intensified by successive transfers of the inoculated organs from animal to animal through several passages

It is almost needless to add, at a time when the importance of adequate control of such significant findings is obviously imperative, that the effects attributed to the saliva from patients with parotitis did not follow the injection of filtrates prepared from the saliva of healthy persons The active agent present in the infectious saliva was found to be neutralized or in some way rendered ineffective by the serum of an animal that had survived the injection of testicular and parotid emulsions, while the serum of a normal animal had no such power Here, then, is a phenomenon surprisingly like others that are now familiar in the experience of immunology in infectious diseases Dr Wollstein remarks that in all these manifestations obviously ordinary bacteria can be excluded as the active agent, since they were never found in microscopic preparations of the "filtrate," or in aerobic or anaerobic tissue cultures or in sections of the inoculated parotid and testes Under these circumstances it seems reasonable to suppose that the active agent is of living nature, thus suggesting the existence here of a minute filterable virus As a corollary to this, the power of prevention exercised by the serum may be assumed to be due to an immune substance developed in the inoculated animals This is an approach, at least, to the determination of the specific microbic cause of parotitis or mumps in man

ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS

Carson, in 1821, first recommended the use of artificial pneumothorax in the treatment of pulmonary tuberculosis In 1882, Forlanini described the method which, after more or less sporadic trials, has been adopted in almost all sanatoriums and hospitals for tuberculosis Recently, Sachs[1] has reviewed 1,145 cases treated by this method by twenty-four American observers The results appear to correspond closely to those of other authors,[2] and it may be of interest to review briefly the chief points

There are two general methods of procedure, of which the original is the simpler and the one usually employed Without anesthesia, under aseptic conditions, a small aspirating needle connected with a suitable apparatus is introduced through an intercostal space Entrance into the pleural cavity is ascertained by the reading of the manometer which is attached Only when free pleural space is encountered may the gas be allowed to flow in Since, under proper conditions, the gas is sucked in, great pressure is unnecessary as well as a source of danger Repeated introduction may be necessary While Forlanini advocated the initial use of from 200 to 300 c c of gas repeated daily, it is the custom now to begin with from 500 to 1,000 c c, repeating the inflation every two or three days until the lung is completely collapsed, as indicated by Roentgen examination Then inflation once a week, and later, when the pleura loses its capacity for absorption, inflation at intervals of from two to three weeks usually suffices The compression may be maintained for one to two years or more, the lung then being allowed slowly to expand While nitrogen is absorbed less readily, sterile air gives the same result Brauer, to avoid air embolism, recommends for the first injection the use of an incision long enough to permit inspection of the pleura Some patients who are not improved by ordinary unilateral pneumothorax are benefited by alternate inflation of the two pleurae, an interval being allowed to elapse each time until the gas previously injected has been absorbed Von Adelung[3] reports four cases in which simultaneous inflation of the two pleural cavities was practiced He recommends the method in selected cases

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[1] Granata, S Med ital, 1908 vi 647, 672

[2] Nicolle, C., and Conseil, E Compt rend Acad d sc., 1913 clvii 340

[3] Wollstein Martha An Experimental Study of Parotitis (Mumps) Jour Exper Med 1916 xxiii 353

[1] Sachs T B Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis, The Journal A M A Nov 27, 1915, p 1861 Tr Nat Assn f Study and Prev Tuberc. *1915* p 150

[2] For example Grundt E Norsk Mag f Lægevidensk 1915 lxxvi 1527

Compression tends not only to stop the growth of tuberculous foci but also to cause healing Cavities are collapsed, and their contents expressed and coughed up Tubercle bacilli may disappear from the sputum With the lessening of lymph and blood supply, "autoinoculation" and "autointoxication" are diminished Immediately following inflation, the temperature usually rises because of increased absorption, and expectoration and dyspnea are aggravated, but this usually is only temporary

Of the cases studied by Sachs, 912 were far advanced Benefit, apparently lasting, resulted in 29 9 per cent of 1,108 cases, while the effect was merely palliative in 21 7 per cent From these results, it is apparent that with the class of patients selected, the method is applicable in only a little over half of the cases

Conservatism is desirable in the selection of cases Thorough preliminary study and consideration of the probable effect on the other lung are essential The best results are to be expected before the development of extensive adhesions, marked involvement of the opposite lung, and irreparable lowering of the general resistance The importance of the condition of the opposite lung is indicated by the occurrence in the study by Sachs of death in about 13 per cent and arrest or recovery in 50 per cent of ninety-one unilateral cases, and death in 23 per cent and recovery or arrest in 25 per cent of 162 cases with bilateral involvement Even in late stages good results may be obtained in patients with severe or repeated hemoptysis and with marked secondary infection, provided the side affected can be determined Severe cardiac disease presents a contraindication

With better technic and conservative selection of cases, accidents are diminishing in number Pleural effusion is the most frequent complication, occurring 113 times in 748 cases reported by fifteen American authors Peters[4] found that in 60 per cent of cases observed by him for a year or more, varying amounts of fluid developed in the pleural cavity He concludes that, given time, fluids develop in most of the patients, the fluid in some cases becoming purulent from the presence of tubercle bacilli only, while in a small percentage secondary infection takes place Although a disadvantage, the fluid, according to Peters, should be let alone unless causing pressure or fever

It may be concluded, that while the sphere of application is being modified by greater conservatism in the selection of cases, the tendency is toward the use of artificial pneumothorax in all suitable progressive cases of pulmonary tuberculosis, regardless of stage, which do not respond to ordinary sanatorium treatment

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ALVEOLAR AIR AND ACIDOSIS

In the advance of scientific medicine, new and more exact methods of diagnosis are constantly appearing It was a great step forward when knowledge of metabolism and diseases of metabolism reached such a level that definite diagnostic and prognostic data could be obtained by laboratory means The utilization of these data in treatment is rapidly advancing also Calorimetry likewise has made no small contribution to clinical progress And yet, in spite of the increased knowledge of the total metabolism and its disorders, there remains the still more difficult problem of devising methods which shall give diagnostic and prognostic light on the various processes of intermediate metabolism, processes not only of synthesis but also especially under conditions of pathologic functioning, processes of catabolism or the breaking down of food and tissue elements

The great difficulty has been to secure methods which would give a reliable index of what was actually transpiring in the body under conditions of abnormal function The various emunctory agents yield important evidence, of course, particularly the urine, but substances appearing in the urine are end-products, and, again, are dependent on the filtering ability of the kidney Hence there are evident inaccuracies in such examinations, and important or even vital data may be wholly lacking There is a practical limitation set to the direct examination of the blood by the time and technical difficulties involved The conditions thus sketched, therefore, make of peculiar value a method which shall throw light on these hidden problems of vital functioning, and at the same time shall be practicable for clinical use

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[3] Von Adelung, E Double Induced Pneumothorax, The Journal A M A, March 4, 1916, p 735

[4] Peters Tr Nat Assn f Study and Prev Tuberc., 1915, p 186

One such method seems to have been found in the study of the concentration of carbon dioxid in the alveolar air This concentration corresponds to the concentration in the blood One of the independent factors which maintains the normal equilibrium of the reaction of the blood is the influence which its content of carbon dioxid has on the activity of the respiratory center The carbon dioxid acts as a weak acid, and the normal stimulation of the respiratory center, ordinarily produced by an increase of carbon dioxid in the blood, is not a specific action, but an action caused by an increase of active acidity, or of H-ion concentration, in the blood The total, or titratable acidity, is due not alone to volatile acids, of which the chief is carbon dioxid, but also to nonvolatile acids whose excretion is largely through the kidneys Any condition which increases the amount of nonvolatile acids in the blood will diminish the capacity of the blood for neutralizing carbon dioxid, or in this condition whatever carbon dioxid is added to the blood by the tissues causes a greater increase of active acidity than it otherwise would By virtue of the strong automatic regulation of the blood reaction and the increased aeration of the blood resulting from the respiratory stimulation, the increased amount of nonvolatile acid in the blood tends, therefore, to decrease the amount of carbon dioxid in the blood and hence in the alveolar air This is the condition called acidosis, and it is characterized clinically by air hunger, or dyspnea, stupor, delirium, vomiting, convulsions and finally coma

Therefore, since the concentration of carbon dioxid in the alveolar air corresponds to that in the blood, and since its concentration in the blood decreases as other acid bodies increase, it is evident that the concentration of carbon dioxid in the alveolar air gives a direct and immediate quantitative gage of the degree of acidosis The normal tension of carbon dioxid in the alveolar air is remarkably constant in different persons and in the same person at different times The chief variations depend largely on the consumption of carbohydrate, which raises the amount Depending somewhat on the method of analysis used, normal figures lie between 38 and 45 mm partial pressure The method of analysis is comparatively simple, and is practicable for clinical application, at least in institutions

Francis W Peabody,[1] in an extensive study of the alveolar air as an index of acidosis, has made an interesting report from the medical clinic of the Peter Bent Brigham Hospital in Boston In diabetes, in which acidosis so commonly plays a preeminent role, the production of abnormal products of fat metabolism, such as aceto-acetic acid, acetone and the beta-oxybutyric acid, may go on for some time without clinical symptoms, because the blood compensates for the acid addition by an automatic chemical readjustment which maintains the blood reaction near its normal Finally, however, the reserve supply of bases in the tissue is exhausted and the increased acidity of the blood stimulates the respiratory center, causing increased aeration, and a decrease in the carbon dioxid tension of the blood With this increasing acidosis, greater and greater aeration is produced by the increasing respiratory stimulation, until the clinical picture of extreme air hunger is reached Death follows unless acid formation can be decreased or basic substances increased for neutralization of the acid

It is well known that examination of the urine is an inefficient guide to the degree and rapidity of acidosis Direct examination of the blood for these acid substances is slow and technically difficult Peabody therefore concludes that analysis of the carbon dioxid tension of the alveolar air gives promise of furnishing a most useful aid in estimating the severity and course of acidosis He found that when the alveolar carbon dioxid fell below normal, the patient entered the danger zone Between 30 and 35 mm of carbon dioxid indicated considerable acidosis and the need of treatment But a tension between 20 and 30 mm is much more serious and requires the closest oversight "A constantly falling carbon dioxid tension is a serious warning and is of great prognostic value If the carbon dioxid tension is down to 20 mm or lower, the patient has reached a state in which coma may suddenly appear" In one case of diabetic coma the alveolar air showed from 6 to 10 mm of carbon dioxid In view of these data it is also evident that the alveolar air will give an accurate index of the effect of treatment in acidosis In fact, treatment can be directed according to the rise or fall of the carbon dioxid tension

In chronic nephritis there is an acidosis due to retention of acid products in the circulation, owing to inability of the kidney to excrete them This is shown by the fall in phenolsulphonephthalein output and by the increase in nonprotein nitrogen accompanying the condition Because of the retention, urinalysis does not give much aid in determining the degree of acidosis In those cases of uremia in chronic nephritis in which air hunger and acidosis play a prominent rôle, the characteristic fall in alveolar carbon dioxid is found and gives the same guide for prognosis and treatment as in diabetes

Of cardiac dyspnea, Peabody finds two principal types Many cases show a decreased carbon dioxid tension, indicating acidosis, which rapidly disappears with improved circulation This is explained as being due to the production of acid bodies from incomplete oxygenation of the tissues, owing to the poor circulation A second group presents evidence of more serious acidosis together with inefficient renal function These cases of true cardiorenal disease owe their dyspnea probably to retention or nephritic acidosis Peabody finds it hard to estimate the exact value of the acidosis in producing this type of dyspnea, but is of the opinion that it is an important element

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[1] Peabody F W Am Jour Med Sc 1916 cli 184

Such studies in pathologic physiology mark the present change from the older morphologic methods of studying change in structure Much is to be hoped from this line of work, and the determination of the alveolar carbon dioxid undoubtedly is a valuable addition to our diagnostic and prognostic armamentarium

THE AVOCADO—A NUTRITIVE FRUIT

In the dietary of many, if not most, Americans the fruits have won a place quite out of proportion to any nutritive value which these plant products can exhibit in terms of calories of actual foodstuffs In practically all fruits in the fresh state the content of water is large, and what there is of true nutrients is derived for the most part from the carbohydrates present In nearly all cases the sugars predominate, starch being present in the thoroughly ripe products only in small amounts The content of nitrogenous material, estimated as protein, is low, amounting to as little as 0 2 per cent in some cases, or as much as 2 5 per cent in others The stone fruits contain, on the average, less than 1 per cent The banana forms an exception, to a certain degree, in that it is comparatively rich in actual nutritive substance equivalent to about 450 calories per pound of edible matter, a figure approached by the edible portions of grapes and pomegranates and exceeded by the less common persimmons In contrast with such food values, equivalent weights of berries, melons or even apples show insignificant figures

From the foregoing it is evident that fruits are ordinarily added to the diet not primarily because of their richness in energy-yielding or tissue-forming components, but rather because they supply other desired factors According to one estimate from a large number of data from American dietary studies representative of ordinary food habits in their respective localities, about 8 per cent of the total cost of the food was due to fruits which supplied less than 3 per cent of the total calories and less than 1 per cent of the protein intake[1] Whatever the value of the fresh fruits in the ration, it cannot be measured primarily in quantitative terms of the ordinary foodstuffs Desired flavor undoubtedly contributes something to the explanation of the widespread use The mineral ingredients also have been charged with special value to account for the popularity of the fruits, and the experiments of Blatherwick[2] have made it clear that many fruits possess a potential alkalinity which is utilized in neutralizing acids within the body This is, of course, contrary to the current conception, which recognizes the presence of organic acids in the fruit juices in abundance, but fails to appreciate that when these are burned up in the organism they yield carbon dioxid, and that thus the surplus of base-forming elements will remain as bicarbonate when these foods are oxidized in the body Through their organic acids and in larger measure through their content of indigestible cellulose or "roughage," the fruits further exert a wholesome effect on the movements of the alimentary tract This laxative property is especially valuable under the prevailing conditions of diet, in which there is a tendency toward the use of highly concentrated and completely digestible foods The indefinite conception as to the real place of fruits in the dietary is expressed in a recent comment by a student of nutrition as follows The dietetic value of fruit, aside from the actual nutrients which it contains, lies in its succulency — its minerals and organic acids If gaged by its nutritive value alone, fruit would seem to be an expensive form of nourishment, but when its hygienic qualities are considered, its money value to the consumer is difficult to estimate Some fruits carry more nourishment with their hygienic properties than others Some contain minerals which are more valuable to the system or less commonly distributed than others Therefore, while there are general properties which are common to all fruits, each has special properties which justify individual consideration[3]

There is a decided element of novelty, therefore, in an available fruit which departs from the conventional varieties by exhibiting a content of nutrients both unlike and greater than that of most species in common use The avocado is a fruit characterized by containing a very large amount of oil, so that the only comparable product is the olive The avocado is by no means entirely new in this country, though native to the tropical and semitropical regions of North and South America, where it is used as a common and much prized article of food It was introduced into California, at Santa Barbara, in 1870, but as yet its scarcity has made the price in our Eastern markets almost prohibitive from the standpoint of any widespread popular use of the fruit[4] The avocado tree belongs to the laurel family, its fruit varies in form from round to pear-shaped with a short or elongated neck, and in weight from a few ounces to 4 or 5 pounds It contains a single large seed which is surrounded by yellowish, buttery flesh

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[1] Sherman, H C Food Products, New York, The Macmillan Company, 1915, p 357

[2] Blatherwick, N R The Specific Role of Foods in Relation to the Composition of the Urine, Arch Int Med, September, 1914, p 409

[3] Jaffa, M E. The Nutritive Value of the Avocado, Bull 254, Univ California Agric Expt. Station, 1915, p 395

[4] Data regarding avocado culture in California are supplied by Condit I J Bull 254, Univ California Agric. Expt. Station, 1915, p 381

Analyses of twenty-eight different varieties of avocado, lately made by Jaffa[1] in the Division of Nutrition at the University of California Experiment Station, show how widely it differs from the average of fresh fruits and prove it to be worthy of serious consideration The edible portion contains, on an average, less than 70 per cent of water, 2 per cent of protein, 7 per cent of carbohydrate, 1 2 per cent of mineral ingredients, and no less than 20 per cent of fat Some varieties have exhibited nearly 30 per cent of the latter ingredient Olives do not exceed this Such data, put into terms of energy units, show that the edible part of the avocado corresponds to about 75 per cent of the fuel value of the cereals, and is not far from twice that noted for average lean meat They explain, furthermore, why the flesh of the avocado has been termed a "vegetable butter" From the earliest records up to the present time the flesh of the avocado has been described as a natural mayonnaise and is often eaten as taken from the fruit, without additional preparation The natives of Mexico often spread the pulp on their black bread in place of butter

The evidence for the dietary value of the avocado is still essentially empiric Chemical analysis alone is by no means adequate to establish the right of a new food product to a permanent place in the national dietary Although no metabolism experiments have been carried on in connection with the avocado, Jaffa reminds us that it is only fair to assume that this fruit is as easily digested as many others whose coefficients have been determined Such data clearly prove that the fruits are quite thoroughly digested Although the availability of the protein is less, the digestion coefficients of the carbohydrates compare favorably with those obtained for the mixed diet, while those of the oils and mineral matter are fully equal to them Meanwhile the enterprise of our American fruit industry must see to it that the present price of from $4 to $8 a dozen is reduced so that this little known fruit may become popular enough to be tested The trees are prolific, and the possibility of successful marketing seems almost assured

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The Doctrine of Insect-Borne Diseases—The doctrine of insect-borne diseases is a singular revival, under the egis of science, of the crude and direct notions of the people They believed in the action of disease through the external surface of the body, as is implied in the idea expressed in the word contagion Thus we find in the Homeric legend, Apollo aiming afar his shafts to spread contagion in the Grecian hosts, and later on, in the middle ages, we meet with the popular credence in ointments as the cause of the spread of plague The discoveries made in recent years of various infections conveyed by insects have confirmed these views, establishing an extensive and remarkable group of diseases introduced through the skin filaria, yellow fever, malaria, plague, trypanosomiasis, the spirilloses, uncinariasis, leishmaniasis, all among the most important diseases that affect man—Dr Juan Guiteras address before the Pan-American Scientific Congress, 1916

Current Comment

DEATH OF DR RODMAN

The announcement of the death of Dr William L Rodman, President of the American Medical Association, which was briefly made last week, came as a shock to our readers He had been unusually active during the last few months, and had come in contact with a great many members of the profession He had spent much time in visiting and addressing medical meetings, and in promoting the new National Board of Medical Examiners Dr Rodman had been active in the affairs of the Association for many years In 1897 he was chairman of the Section on Surgery, presiding at the Denver meeting, in 1900 he delivered the oration in surgery on gastric ulcer He was a member of the Board of Trustees from 1900 to 1903 He was a member of the House of Delegates from Pennsylvania in 1905-1906, a member of the Committee on National Legislation for many years, and for seven years chairman of the Committee on Reciprocity, until the work of this committee was turned over to the Council on Medical Education It was during the time that he was chairman of this committee that he became interested in the plan for a voluntary national licensing board The ambition of years to see such a board organized was practically realized, as the board was on a permanent basis at the time of his death Dr Rodman took a deep interest in various matters of public welfare He was interested in the work of reorganization of the medical department of the army and the strengthening of the preliminary requirements in the practice of medicine, in the American Society for the Control of Cancer, and during the last few months in medical military preparedness This, we believe, is the first time that a President of the Association has died during his term of office The By-Laws provide that in case of the death of the President the vacancy shall be filled by the ranking Vice President Therefore Dr Albert Vander Veer of Albany, N Y, will complete Dr Rodman's term as President

WORM OVA IN FLIES

Observations made at the Mombasa Hospital of the British East African Medical Service on persons attached to the expeditionary forces involved in the European war showed that patients assigned to the surgical wards, after varying intervals, contracted bowel troubles which were found to be due to intestinal parasites An examination of 100 natives of indigenous races, admitted into or attending the hospital, complaining of intestinal troubles, had earlier shown evidences of helminthic disease in 83 per cent of the cases The most frequently found ova of parasitic worms were those of *Ankylostoma duodenale*, *Ascaris lumbricoides*, and tapeworm, multiple infections being very frequent This combination of circumstances placed the flies frequenting these wards under suspicion An investigation conducted by medical officer Shircore[1] showed that a considerable number of the flies actually harbored ova Inasmuch as the flies are readily captured and can be preserved and subjected to examination subsequently, when opportunity is afforded, Shircore suggests that this plan offers a method whereby prevalence of helminthiasis may be determined in a locality where it is either difficult or impossible to obtain fecal matter for examination

THE WINE OF CARDUI SUIT

Next week what promises to be one of the most important lawsuits of its kind will be opened in the federal courts at Chicago Technically the case is the Chattanooga Medicine Company *vs* the American Medical Association and the editor of The Journal In its far-reaching effects the case *might* be described as the "Patent Medicine" Interests *vs* The Public Health Out of the dozen or more suits filed against The Journal and the Association during the past ten years this will be the only one that has ever come to trial It will give the Association the long-sought opportunity to present the facts regarding at least one phase of the worthless "patent medicine" business, and it is hoped will afford the Association an occasion to show what it has done, is doing, and intends to do, to protect the public against medical imposition and deception There are few physicians, we imagine, who do not know in a general way of the action brought by the manufacturers of Wine of Cardui Since the suits were commenced the enormous power and influence of almost unlimited wealth have been evident The medicine company has, during the last year and a half, taken hundreds of depositions through the South largely from women who claim to have been cured or benefited by the use of Wine of Cardui Not a few of these depositions, however, have been from men who have the legal right to put "M D" after their names The conception these persons had of their duty to the public health was such that they were willing to lend the weight of their professional influence, such as it is, to bolstering up the worthless "patent medicine" business It is true that many of these physicians who have thus stultified themselves are, or have been, also in the drug business and thus beneficiaries of the "patent medicine" trade The tens of thousands of dollars which have been necessarily expended in taking these depositions but feebly represent the power wielded by the nostrum fraternity In the recent trial at Chattanooga, where the Wine of Cardui concern brought suit against the president of the Louisiana State Board of Health for exhibiting in the State "Health Train" a poster declaring the preparation fraudulent, the baneful effect of "patent medicine" influence was shown It was brought out on the witness stand that after the poster referred to was displayed at Chattanooga a high official of the railroad over which the train was being carried brought pressure to bear to have the placard removed from the exhibit on the plea that it was detrimental to the interests of their Chattanooga patrons! The — ostensibly — free transportation this railroad had offered in the interests of the public health apparently had a very definite "string" to it When the health authorities of a commonwealth find it imperative to shape their educational work to meet the demands of the "patent medicine" interests, cracking the whip through public-service corporations, it is about time that attention is called to these facts It may be expected that the newspapers will contain reports on the progress of the case, which will doubtless extend over some weeks Remembering the millions that are spent every year in "patent medicine" advertising — and during the last year the amount has apparently been enormously augmented, for reasons more or less obvious — some newspapers may color their reports to favor their advertisers "Whose bread I eat, his song I sing!" Fortunately the daily press, generally, is no longer under the blight of the "red clause" of the "patent medicine" advertisers There are many high-grade papers throughout the country which may be expected to handle the case without fear or favor

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest, such as relate to society activities, new hospitals, education, public health, etc)

ILLINOIS

Personal —Dr E Joe McEntire, Erie, has been under treatment in the Presbyterian Hospital, Chicago——Dr James A Cline, Joliet, underwent operation for disease of the throat at Wesley Hospital, March 7——Dr Theodore H Trappe, Hecker, was thrown from his horse while making a professional call, February 21, and sustained severe bruises

The Contagious Disease Situation —Dr C St Clair Drake, secretary of the state board of health, issued a warning March 1, to local health authorities in view of the spread of communicable diseases in the state The communities most seriously infected by smallpox are said to be Peoria and vicinity, Staunton, Decatur, Springfield and the counties of Woodford and Fayette——At Peoria there are seventy-seven cases of scarlet fever and twenty-four of smallpox The scarlet fever situation is improving——Rockford reports sixty cases of scarlet fever, nine cases of diphtheria, and that measles is prevalent——At Shelbyville, 110 houses are under quarantine for measles

Chicago

Municipal Health Journal —Health Commissioner Robertson announces that the initial number of the municipal health journal will appear April 1 It will be known as *Clean Living* Dr Robertson plans to issue 100,000 copies for free distribution through schools and other channels

Alienists and Neurologists to Meet —Dr William T Mefford, secretary of the conference, announces that the fifth annual meeting of the Alienists and Neurologists of the United States will be held at the LaSalle Hotel, Chicago, June 19 to 23, under the auspices of the Chicago Medical Society

Personal —Dr and Mrs Edmund Andrews have returned from Florida——Dr and Mrs Casey A Wood are visiting in California——Dr Edwin O Jordan has been appointed chairman of the committee on sanitation and hygiene of the University of Chicago, and Dr Dudley Billings Reed has been appointed health officer——Dr Frank E Hansen, ambulance surgeon at the Shakespeare Avenue Station, was seriously injured in a collision between the ambulance and a street car, March 8——Dr G E Wright has resigned as superintendent of the Isolation Hospital——Dr John A McGill, retiring president of the Illinois St Andrews Society, was given a dinner by the Scotsmen of Chicago, March 1

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1 Shircore, T O A Note on Some Helminthic Diseases with Special Reference to the Housefly as a Natural Carrier of Ova, Parasitology, 1916, viii, 239

FLORIDA

Personal—Dr William A Claxton, Jacksonville, has been assigned to duty in the hospital corps in Egypt and has started for Alexandria——Dr Lyman G Haskell has been elected second vice chairman, and Carroll H Frink secretary of the Jacksonville chapter of the American Red Cross

Medical Library for Society—The Hillsboro County Medical Society is planning the establishment of a comprehensive reference library in Tampa for the use of its members, and a committee has been appointed to make arrangements for the collection of subscriptions from physicians of the city for the purchase of books and subscriptions to medical periodicals The society also has asked the city council to provide a place for the medical library in the public library building

MARYLAND

Carolina Surgical Club at University—The Hospital of the University of Maryland held a series of clinics, March 2, before the North Carolina Surgical Club, after which a luncheon was tendered to the visiting surgeons

Health Meeting—The third of a series of public health meetings was held at Catonsville, under the direction of the Medical and Chirurgical Faculty of Maryland, and the Women's Civic League of Catonsville, March 10 Lectures on Child Welfare" were delivered by Dr Mary Sherwood, Baltimore, Dr Samuel J Fort Catonsville, and Dr Albert L. Wilkinson, Raspeburg Motion pictures were also shown in connection with the lecture

Personal.—Dr William Burgess Cornell executive secretary of the Mental Hygiene Society of Maryland, has resigned to become medical director of the New York City Hospital and School for Children, Randall's Island——Dr Charles B Thompson at present on the staff of the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, has been selected to succeed Dr Cornell as executive secretary of the Mental Hygiene Society——Dr James H Billingslea Westminster, is at the Presbyterian Ear, Eye and Throat Hospital for treatment for cataract——Dr Harry F Shipley, Granite, is undergoing treatment at the Mercy Hospital——Dr Walter E Dandy, assistant surgeon at Johns Hopkins Hospital, has been appointed resident surgeon succeeding Dr Roy D McClure, resigned to become assistant surgeon of the new Henry Ford Hospital Detroit.——Dr Grover A Stem, Westminster, has returned after several months' service with the American Red Cross in the war zone

Annual Health Conference—The Sixth Annual Health Conference of the Medical and Chirurgical Faculty was held in Baltimore March 6 to 11, and proved one of the most successful conferences ever held The attendance at`all the meetings has been most gratifying The program was as follows

March 6 'The Relation of Preventive Medicine to Child Welfare Dr William H Welch.

March 7 Relation of Heredity to Child Welfare Dr Adolf Meyer 'Prenatal Care," Dr Alice Weld Tallant Professor of Obstetrics, Women s Medical College Philadelphia

March 8 Midwifery Dr John W Williams 'Midwifery Conditions in Maryland, Dr Fred V Beitler Halethorp

March 9 Infant Welfare Dr James H M Knox, Jr 'The Babies of China Dr Mary J Stone.

March 10 Nutritional Diseases of Babies Dr Charles W Mitchell Infectious Diseases of Babies Dr Charles O Donovan 'Economy and Efficiency from an Oral Hygiene Standpoint' Dr Herbert L Wheeler

March 11 What a City Should Do With or For Day Nurseries' Miss Anna W Kerr Department of Health New York 'The Kindergarten in Relation to the Physical Welfare of Children, Miss Patty Hill Professor of Kindergarten Education Columbia University

There were motion picture exhibitions every evening from 8 to 8 30 p m and the health exhibit was open daily

MISSOURI

Changes at State Hospital No 2—Dr Collis I Roundy, St. Joseph, has been appointed a member of the medical staff——Dr John A Postlewait, Tarkio, has resigned as president of the board of trustees——Dr William L Whittington St Joseph, has been appointed superintendent, succeeding Dr George R. Thompson.——Dr Amos T Fisher has resigned as pathologist, and Dr Ray O Lieuallen, as a member of the staff of the hospital

Personal.—Dr Arthur L Anderson, Springfield, retired president of the Greene County Medical Society was the guest of honor at a dinner given by the society February 25, over which Dr Joseph W Love, Springfield, presided as toastmaster——Dr Joseph S Summers, Jefferson City, suffered $2,000 damages by a fire in his office, February 24——Dr George Dock, St Louis, delivered an address, March 2, before the physicians of Jacksonville, at the public library on "The Relation of the Medical Library to the Public."

Sanatorium Notes—Drawings have been prepared by Kansas City architects for the new $100,000 tuberculosis sanatorium for Jasper County The site for the hospital and the decision on the plans will be decided this month——A permanent organization looking to the relief and control of tuberculosis in Greene County was effected, February 16, at a meeting held in Springfield The charter membership includes about fifty members of the Greene County Medical Society Springfield Graduate Nurses' Association, Springfield Visiting Nurses' Association, and others The first official act of the association was the proposal for an election to vote bonds of $50 000 to erect and maintain a sanatorium for tuberculosis in Greene County

NEW YORK

The Fronczak Dinner—A complimentary dinner was given by members of the medical profession of Buffalo, March 15 at the Hotel Statler, to Dr Francis E Fronczak, the first appointed health commissioner under the new commission form of government Dr F Park Lewis officiated as toastmaster The speakers included Drs John C MacEvitt, Brooklyn, Deputy State Health Commissioner Dr Linsly R Williams, Mayor Louis P Fuhrman and others Dr Fronczak requested that instead of a token of esteem being given to him the equivalent in money might be presented for the benefit of suffering humanity and suggested the American Red Cross as the most worthy recipient of this donation

Roe Memorial Meeting—A special meeting of the Rochester Academy of Medicine will be held, March 29, as a memorial to the late Dr John Orlando Roe at which Dr Joseph R Culkin, president of the Academy, will give an outline sketch of Dr Roe's life, Dr Eugene H Howard will present the report of the committee on resolutions, a portrait of Dr Roe will be exhibited and accepted by the president in behalf of the academy, Dr Bradford A Richards will present a paper on "The Scientific Contributions of Dr Roe" followed by a discussion and personal reminiscences, and Dr Wendell C Phillips, New York, will close with an address on 'John O Roe as a Scholar and Man, His Personal Characteristics and Worth"

Personal—The Medical Advisory Board of Niagara Falls Memorial Hospital on March 3, presented Dr William H Hodge with a loving cup Dr Hodge was organizer of the board in 1905, and has served as a member ever since and several years as chairman of the board——Dr James D V Sheehan, Syracuse, has been appointed vaccinator succeeding Dr Juliet E Hanchett.——Dr John H Benjamin, Riverhead, is reported to be ill in Dr Pilcher's Private Hospital Brooklyn——Drs John and Edward S Van Duyn and Daniel F Luby, Syracuse, leave for the war zone this month and will be on duty with Auxiliary Hospital No 43, located at Dieppe France——Dr Willard J Denno, New York now secretary of the state department of health, has been appointed secretary of the State Board of Medical Examiners

New York City

New Charities Bulletin—The commissioner of the Department of Public Charities of New York announces that nine hospitals of the department are about to publish a medical bulletin to be known as the "Hospital Bulletin of the Department of Public Charities"

Columbia Medical School Open to Women—The trustees of Columbia University, at their last meeting, decided to admit women to the medical school as soon as the equipment made the step practicable Five years ago women were admitted to the summer sessions The entire enrolment of the medical school at present is 373

Hospital for Wall Street District.—Application was made recently to the secretary of state for a charter for the new Broad Street Hospital It is announced that sufficient funds have been subscribed by individuals and firms in the Wall Street district to insure the continued service of the hospital to the 1,500 000 people of the downtown section of Manhattan

Personal.—Dr Joseph A. Blake has been made chief of the surgical center in the Department of the Seine and Oise This promotion is the first of its kind to be con-

Dr. Robert Kellg Library

ferred on an American surgeon in the service of France It places Dr Blake in direct control of six military hospitals ——Dr and Mrs Donald B Armstrong, Stapleton, S I, have been awarded the $1,000 prize offered by the Metropolitan Life Insurance Company for the best pamphlet on social hygiene for boys and girls ——Dr William B Giles returned, February 24, after eight months' service in the French military hospitals ——Dr Frank H Lasher, Brooklyn, had two ribs fractured in a collision between his automobile and a wagon, February 25

Semicentennial of Health Department—The New York City Health Department celebrated the fiftieth anniversary of its establishment with a banquet at the Plaza Hotel, March 9, at which Health Commissioner Haven Emerson presided Mayor Mitchell spoke on "The Health Department's Place in the City Government", City Chamberlain Bruere on "The Future of the Health Department", State Health Commissioner Hermann M Biggs on "The Scientific Control of Infectious Diseases", Dr Walter B James, president of the New York Academy of Medicine, on "The Medical Profession and the Public Health", Dr William H Welch of the Baltimore Children's Hospital on "National Importance of Preventive Medicine," and Dr Stephen Smith, a member of the original City Board of Health, on "Development of the Health Department as Seen by a Pioneer" Greetings from Canada were presented by Dr Bryce

NORTH CAROLINA

New Equipment for State Laboratory—The state laboratory of hygiene, operated under the direction of the state board of health as one of its divisions, has recently been provided with new equipment, and it is expected to be able to offer the profession of the state better facilities for the free examination of throat secretions for diphtheria, sputum for tubercle bacilli, feces for hookworm, blood for the malarial plasmodium, etc

Operation of New Medical Statute—Under the first six months of the operation of the new state medical statute (taking effect July 1, 1915), transferring the authority for prosecutions of the state medical license practice laws from the local counties to the office of the attorney general at Raleigh, who on complaint of the state board of medical examiners, directs the solicitor to bring prosecutions, twelve unlicensed physicians have left the state to evade prosecution, and three have been prosecuted and convicted in the courts

Polyclinic Organized—The St Agnes' Polyclinic has been organized at Raleigh in connection with St Agnes' Hospital for Colored People Dr Jennie A Duncan is resident physician and superintendent of nurses and Dr Lemuel T Delany, assistant resident physician The management of St Agnes' Hospital, in announcing the organization of the polyclinic, invites all regular physicians to attend free of charge, and expresses the hope that the polyclinic will prove of interest to the physicians of the surrounding territory who may now be able to attend systematic clinics to be appointed for their convenience

OHIO

Polish Doctors Organize—Polish physicians of Cleveland have organized a local branch of the Polish Physicians' Union, with an initial membership of sixteen Dr Walter Peters was elected president, Dr Frank J Kuta, vice president, and Dr Ignatius M Jarzynski, secretary-treasurer

Personal—Dr Arthur G Hyde, acting superintendent of the Cleveland State Hospital for eighteen months, was appointed superintendent, March 1, succeeding Dr Charles H Clark transferred to the Lima State Hospital ——Dr John G Frey, Cleveland, has been appointed neurologist in charge of the new Eugenic Laboratory of Cleveland ——Dr Clarence D Selby has been appointed commissioner of public health of Toledo, succeeding Dr Daniel W Iford, resigned ——Drs Willard J Stone and John T Murphy, Toledo, participated in the program of the Hardin County Medical Society at Kenton, February 29 ——Dr Charles E Sawyer, Marion, has been appointed a member of the state medical board, succeeding Dr T Addison McCann, Dayton, term expired

Cincinnati

Personal—Dr James M Bentley has been appointed junior visiting physician to the contagious group of the Cincinnati General Hospital ——L Georges Rasetti, who served for several years on the western front with the French army, was transferred to Bonaki, Occidental Africa, December 15 ——Dr Thomas W Hays, who has been ill at the Betts Street Hospital for several weeks, is reported to be convalescent

Diphtheria—An epidemic of diphtheria is stated to exist in the Twenty-Second Ward where thirty-seven out of eighty-five known cases in the city have been reported The houses are placarded and every precaution to check the spread of the disease is being taken ——A formal complaint has been lodged by Health Officer John H Landis and Assistant Health Officer Peters, with the State Board of Medical Examiners, against the method of a Cincinnati physician in treating diphtheria This practitioner is stated to be opposed to the use of antitoxin and to have advised his patients and their families that the use of this agent was harmful rather than beneficial

OKLAHOMA

Hospital Notes—The new Woodward Hospital, which was opened by Dr and Mrs Clinton M Tracy, January 13, is building an addition of sixteen rooms

Smallpox in Oklahoma City—At Oklahoma City, all the pupils of the high school were ordered to be vaccinated on account of the presence of smallpox, and the presence of the disease in one of the teachers Two pupils refused to comply with the order and were ordered to remain out of school for thirteen days

New District Society—Dr Garraed P Cherry, Mangum, recently called a meeting of physicians of the counties comprising the third councilor district and organized a district society Dr Sam H Landrum, Altus, was appointed secretary, and the next meeting will be held at Altus, April 5 The society will hold clinical meetings quarterly

Personal—Dr Albert C Hirshfield, Norman, who has returned after a year of service with the Russian Army, will locate in Oklahoma City ——Dr Clinton M Maupin, Waurika, has been appointed health officer succeeding Dr Roscoe G Dixon, Sugden, deceased ——Dr James J Williams, Weatherford, has been appointed a member of the State Board of Medical Examiners, succeeding Dr Le Roy Long, Oklahoma City ——Dr George D McLean, Oklahoma City, has returned from service with the British Army in France

PENNSYLVANIA

New State Hospital Wanted—The state board of charities, at its meeting in Harrisburg, March 8, advocated the erection of a new hospital for the insane, the establishment of a home for those suffering from incurable diseases and the completion of the village for feebleminded women at Laurelton

Philadelphia

Dermatologists Seek Charter—A petition for a charter was filed, March 1, in the Common Pleas' Court, by Drs J F Schamberg, J M Kolmer, David Riesman and Albert D Ferguson, for the incorporation of a Dermatological Research Laboratory, the object as stated being "for the promotion of scientific research into the cause and care of skin disease and every other disease of cognate character"

Medical Conditions of South Philadelphia—"The Medical Conditions of South Philadelphia" will be discussed by Director Krusen and others at a combined meeting of the South Branch of the Philadelphia County Medical Society and the South Philadelphia Business Men's Association at a meeting, to be held March 27 This will replace the stated meeting of the branch society scheduled for March 24

Indictments in Antidope Crusade—Twenty indictments against persons accused of violating the Harrison Narcotic Law were returned, March 10, by the federal grand jury This makes a total of fifty-eight indictments returned by the grand jury since March 6 Of the number returned March 10, nine are against dealers and two are against physicians The specific charges against physicians are that they furnished prescriptions for narcotics to dope victims who were not under their observations as patients taking a cure for the habit

Personal.—Dr Alonzo E Taylor, Rush Professor of Physiological Chemistry at the University of Pennsylvania sailed March 11 for Germany where he will engage in Red Cross work as an attache of the American Embassy at Berlin ——Dr Francis V Gowen sailed, March 11, for Bordeaux, France and will be attached to a military hospital at Beaumont, Périgord ——Friends of Dr John W Dick gave him a testimonial banquet, March 6, to commemorate the beginning of his fiftieth year of active medical practice Dr Empson H Bainbridge presented Dr Dick with a gold stick pin bearing the numerals "50" and he also received other presents ——Dr Daniel J McCarthy has been appointed by the president as an American agent to study German prison camps, and sails for Germany this week——Dr William J Ryan has been appointed assistant ophthalmologist to the Philadelphia General Hospital

WISCONSIN

Communicable Diseases—An epidemic of scarlet fever is said to exist at Racine, where sixty cases have been reported ——A death certificate received by the health officer of Milwaukee, March 1, gave the cause of death as typhus fever, the first death from this disease reported in Milwaukee since 1912.

Typhoid Fever—On March 4 eleven new typhoid cases were reported in Milwaukee making a total of 261 with twelve deaths——The secretary of the school board has bought 500 000 paper drinking cups for the use of schoolchildren All drinking water in the schools is thoroughly boiled——The City Council of Milwaukee, on March 2, appropriated $10 000 as an emergency fund to be at the disposal of Health Commissioner Ruhland for use in halting the spread of typhoid fever——Dr Cornelius A. Harper, state health officer, Madison, was in Milwaukee, March 2 to study the typhoid situation——Six physicians have been appointed to administer antityphoid inoculation to all persons in homes in which typhoid fever exists——Several men employees of the dam construction work on the Mississippi River at Genoa have been stricken with typhoid fever——The State Hygienic Laboratory Madison has manufactured sufficient serum for the antityphoid inoculation of several thousand persons

CANADA

Aesculapians Elect.—The Aesculapian Club, Toronto, closed its meetings for the season of 1915-1916 on March 9 Dr Charles J C O Hastings was elected president, Dr William Goldie, vice president, Dr George Elliott, secretary, and Dr Edmund E King treasurer

Compensation Act.—The Medical Council of Ontario is seeking suggestions from the medical profession as to changes in the Ontario Workmen's Compensation Act. At the present time the physician attends the injured, makes out the papers for the presentation of his chaim, receives no remuneration from the employer, nor from the compensation board, and it is said, not much from the injured

Tuberculous Conferences.—The City Health Department, Montreal, held a series of conferences during 1915 in its campaign against tuberculosis and infant mortality which were attended by over 26 000 people. Altogether 147 lectures were given and it has been decided to continue these conferences during 1916 Montreal has fourteen public baths under municipal direction These are available to women on certain days of the week.

Personal.—Lieut-Col Robert M Simpson, M D, Winnipeg, who was placed under arrest while on active service in France, may be brought back to Winnipeg under military orders He is charged with complicity in the Manitoba Parliament Building frauds——Lieut-Col Arthur E Ross, M P P., Kingston, Ont who was offered the command of the Ontario Military Hospital, recently opened at Orpington, England, has declined to accept the position

GENERAL

Sanitary Convention—The fourth annual meeting of the Southern Sanitary Association will be held at Brunswick, Ga, March 23 and 24

Michel Receives Medal of Honor—Assist Surg Carl Michel, U S P H S, has been awarded a silver medal of honor by the secretary of the treasury in recognition of his efforts to save a man from drowning at El Condado Beach, San Juan, P R., Nov 27, 1915 Surgeon Michel swam, at the risk of his life, through a heavy surf breaking over a coral reef in an endeavor to save the man who was struggling in the heavy breakers and who was being swept out to sea

Study of Criminal, Pauper and Defective Classes.—The establishment in the Department of Justice of a bureau for the study of the abnormal classes is provided for in a bill introduced by Senator Robinson of Arkansas The work is to include both laboratory investigations and the collection of sociologic and pathologic data, especially such as may be found in institutions for the criminal, pauper and defective classes Cooperation with state and municipal and other officials of this and other countries is authorized

Mortality Statistics to be Regulated—If a bill introduced by Representative Watkins of Louisiana be enacted, the Federal Census Bureau, in compiling mortality statistics, will make a separate tabulation and rating of the white and the colored races and the mortality rates of cities will be based on the deaths of actual residents only The death rates of nonresidents are to be kept separately What shall constitute a 'resident" within the meaning of the law is specifically assigned to the Census Bureau for determination

A Warning—Dr Frank B Reagor of Shelbyville, Tenn, writes to The Journal asking that a warning be published against John Mack, who claims to represent the Ohio Service Co of Cincinnati, and who is selling automobile supply service at $10 Dr Reagor states that mail addressed to this company at Cincinnati is returned with the notation that there is no such concern in that city In The Journal for March 4, 1916 p 748 under the heading Kentucky News, a warning was published concerning a similar scheme used by a man who gave his name as L. A McCoy

Sociologic Congress—The Sociologic Congress will hold its annual session in New Orleans, April 12 to 16, and the convention will really consist of eleven conferences which will meet separately during the morning all coming together in the afternoon and evening for general session The special subjects for conference are 'The Government and Health", The School as the Conserver of Health", "The Medical Profession in the Fight With Public Health", "The Press as the Champion of Public Health", "Race Relations," and 'The Church as the Guardian of the People's Health" There will also be conferences on law and order, the teaching of sociology in Southern schools, travelers' aid, temperance and other vital sociologic topics

Belgian Scholarship Committee—The Belgian Scholarship Committee which was founded about a year ago in Washington to collect money for destitute scholars, is now broadening its scope Its aims are at present to give to Belgian scholars, artists and writers every chance to resume their work in arts or sciences and to raise a fund for the reconstruction of a new and better Belgium, especially in the educational field The committee makes an appeal for promises of books to be shipped to Belgium as soon as circumstances permit and suggests that libraries, educational institutions and learned societies send the committee a list of the books they are willing to give to Belgium Thus it will be possible to offer Belgium soon after the cessation of hostilities, a library of books published in America or relating to American affairs The committee also appeals for money to help Belgian scholars and artists and to carry on its activities Associated members of the Belgian Scholarship Fund agree to subscribe at least $10 a year, sustaining members at least $100 and fellows $1 000 Checks should be drawn to the order of John Joy Edson, treasurer, and transmitted to the Belgian Scholarship Committee, 309 Wilkins Building, Washington, D C

Prohibition of Guaranty Legend on Food and Drug Labels—The difficulty encountered in undertaking fairly and effectually to carry out the spirit and intent of the Federal Pure Food Law of June 30, 1906, was clearly shown in a public hearing held by the Bureau of Chemistry, Department of Agriculture, in Washington, March 10 The purpose of the hearing was to discuss the necessity of a further postponement of the date when the order forbidding the use of a guaranty legend on the labels and pakages of foods and drugs should be discontinued The hearing was attended by representatives of the National Canners' Association, the National Wholesale Druggists' Association the National Retail Druggists' Association, the National Drug Trades Conference and the National Association of Manufacturers of Medicinal Products, and by representatives of establishments engaged in the manufacture of labels and containers of food and drug products At the close of the hearing the Board of Food and Drug Inspection before which the hearing was given, took the matter under advisement.

It will be recalled that the secretary of the treasury, the secretary of agriculture and the secretary of commerce are authorized by the Pure Food Law to make regulations for carrying the law into effect. By the regulations as first promulgated it was provided that a general guaranty might be filed with the secretary of agriculture by any manufacturer of or dealer in drugs and food products who desired to assume full responsibility for the purity and correct labeling of his product even in the possession of other dealers, that each guaranty so filed should be given a serial number, and that every package of goods sold under such guaranty should contain on the label the serial number so given and the words "Guaranteed Under the Food and Drugs Act, June 30, 1906" Attempts were soon made, however, by unscrupulous persons, through advertisements in the press and by circulars and billboard posters, to cause the public to interpret the phrase as a guaranty not by the manufacturer but by the government itself, and the Commissioner of Patents found it necessary to refuse to register trademarks of which the guaranty clause formed a part, on the ground that the phrase was misleading and under the law could not be registered The regulation was, therefore, amended by the three secretaries, to take effect Jan 1, 1909, so as to require that the name of the guarantor form a part of the guaranty legend, as follows "Guaranteed by (insert name of guarantor) under the Food and Drugs Act, June 30, 1906", but the amendment provided that two years should be allowed within which to use up old labels and plates and to provide new ones

The amendment to the regulations that required the name of the guarantor to appeal in the guaranty legend did not accomplish the desired end, and on May 5, 1914, the filing of general guaranties and the assignment of serial numbers were discontinued, and the use of any guaranty legend on the label or package was forbidden, to take effect May 1, 1915 Subsequently the date when this amendment was to take effect was postponed until May 1, 1916, with the further proviso that products packed and labeled prior to that date in accordance with the old regulations might be sold up to Nov 1, 1916 It was because of the approach of the dates when the prohibition of the use of the guaranty legend and of the sale of goods bearing it will become effective that this hearing was given

Statements were submitted on behalf of the various interests represented at the hearing to show the extent, nature, and value of the stocks of labels still on hand, notwithstanding that no new labels had been ordered bearing the guaranty legend since the use of such labels had been forbidden by the amendment of May 5, 1914 The labels still in the possession of one of the large packing houses was said to be worth approximately $42 000, although three quarters of the entire product of the concern is now going out under labels conforming to the new requirements Labels for standard goods are ordered in the largest practicable quantities from motives of economy and convenience, and by reason of crop shortages, which limit the volume packed, and of variations in the demand, a given edition of labels may last much beyond the expected time Manufacturers of labels pointed out the difficulties in the way of canceling the guaranty legends on labels already printed, and the expense involved, and on behalf of canners and manufacturers of drugs it was alleged that the canceling of the guaranty on a label would give rise, in the mind of a possible purchaser, to the idea that the guaranty had been withdrawn on account of some impurity or deterioration in the goods To enforce the discontinuance of labels already on hand and the change of labels on outstanding stocks of goods in the hands of jobbers and retailers would, it was claimed, not only cause a very great money loss but also lead to a great amount of confusion and trouble On behalf of the National Association of Retail Druggists, it was urged that the presence of a guaranty legend on the label afforded a real and convenient protection to the retailer, and that no instance of fraud arising out of the legend was known to the association The manufacturers, however, claimed that to them the guaranty legend was of no value legally or commercially, although some of them might desire to keep it on their labels from sentimental reasons On behalf of one manufacturer it was contended that the government could not lawfully forbid the use of a guaranty legend on a label, unless the legend used could in fact be shown to be false and misleading, and inquiry was made as to whether the government would agree to a test case or agree to expedite a case so as to have the courts determine this point Both suggestions were met with the statement that the government never agreed to test cases and that it could not undertake to expedite any other case that might be brought The manufacturers and dealers asking the further postponement of the time when the use of the guaranty legend would become unlawful suggested no specific date for such postponement, but desired to be allowed if possible to use up all stocks of labels now on hand, regardless of the length of time required for that to be accomplished It seemed to be the opinion of those manufacturers and dealers who were present that such an extension of time would work no injustice to such manufacturers and dealers as have already arranged to comply with the regulation within the time stated, the opinion being that the presence of the guaranty legend on a package did not stimulate its sale An opportunity was given any one opposed to an extension of time to protest, but no one appeared

FOREIGN

Merger of Madrid Exchanges—The *Siglo Medico* has taken over the *Revista Clinica de Madrid* which has just closed its eighth volume The *Siglo Medico* thus enters its sixty-third year with a more than doubled editorial staff and the backing of the *Revista*

Precautions at Matamoras—The health authorities at Matamoras, Mexico, opposite Brownsville, Texas, have adopted energetic measures to prevent typhus fever from entering the United States at this point At the railway station a fumigation plant and gasoline bath equipment have been established, and every passenger arriving from points as far inland as Monterey is thoroughly fumigated and his clothes treated by gasoline before being permitted to make application for entry to the American immigration authorities ——The city officials of Matamoras have arranged for a house-to-house vaccination campaign against smallpox, and three physicians have volunteered their services for this work

Deaths in the Profession Abroad—R Benavides, professor of obstetrics at the University of Lima, Peru, from 1865 to 1911, president of the Academia Nacional de Medicina for several terms, aged 84——L Comenge, chief of the public health service of the Barcelona district of Spain and writer on medical subjects and on the history of medicine He is credited with having fought off the plague from Spanish possessions——S Stocker-Steiner of Lucerne, Switzerland died suddenly from heart disease, aged 67 He took a leading part in the organization of the profession and in public health matters, the installation of a public water supply at Grosswangen being one of the innovations credited to his efforts——C Girard, professor of surgery at the University of Geneva, Switzerland, and chief of the surgical clinic, aged 66

Our Foreign Exchanges—The file of contents of the weeklies in foreign languages, published regularly in our Foreign Current Literature Department, is now complete for 1915 for the *Presse Médicale* and the *Bulletin de l'Academie de Médecine* of Paris, and for the *Berliner, Deutsche, Munchener* and *Wiener Wochenschrifts,* the weekly *Tijdschrift* from the Netherlands, one Swiss, three Italian and two Danish weeklies Only one number is missing to make the file complete of the *Medizinische Klinik,* the Russian weekly *Vrach,* from Petrograd, the *Semana* from Buenos Aires, and the *Brazil Medico* from Rio The weekly Zentralblatts for gynecelogy, surgery and internal medicine, from Leipzig, all stopped abruptly with the issue for Nov 20, 1915 Some of the monthlies from the various countries show several gaps, as is evident in the Current Literature Department, but the three Scandinavian monthlies and a number of the French and German have been completely indexed The showing in our Foreign Current Literature Department through 1915 thus testifies to excellent postal arrangements in the belligerent and adjacent countries even through the war Some of the French monthlies finished late in 1915 the volume begun in 1914 One issue of the *Revue de Chirurgie,* for example, bore the date "Aug 1914-Nov 1915," meaning that this one copy embraced these fifteen months Eleven regular French exchanges, including the well known *Semaine Medicale,* have given no signs of life since the war began Some of the weeklies, like the *Lyon Médical,* changed to a monthly and have been coming regularly

WAR NOTES

Relief for Serbians in Corfu—Dr Edward W Ryan of the American Red Cross Commission to Serbia left Athens, March 2, with 240 tons of foodstuffs, clothing and medicine for the relief of Serbians on the Island of Corfu

Government Respects Scruples—In a circular issued by the local authorities in London, March 7, the position of a conscientious objector under the new military compulsion act is defined They hold that the man who honestly, and as a matter of conscience, objects to combatant service is entitled to exemption This certificate of exemption would not exempt the objector from service, for instance, in the Royal Army Medical Corps In exceptional cases in which genuine convictions and the circumstances of the man are such that neither exemption from combatant service nor conditional exemption will adequately meet the case, absolute exemption may be granted if the tribunal is fully satisfied of the facts

PARIS LETTER

Paris Feb 17, 1916

The War

EPIDEMIC DISEASES DURING THE WAR

Statistics show that there have been fewer epidemic diseases during the war than there were during peace Measles and scarlet fever have almost disappeared, typhoid fever alone has increased but it causes fewer deaths The mortality for this disease has fallen from 12 per cent of the patients to 2.55 per cent in the last quarter of 1915 The mortality for all contagious diseases together, which was 0 27 per thousand in the last quarter of 1911, was, in 1915, 0 15

Following are the figures for each disease

	1911	1915
Measles	1 26	0 11
Scarlet fever	1 29	0 12
Mumps	2 18	0 73
Diphtheria	0 35	0 39
Cerebrospinal meningitis	0 04	0 09
Typhoid fever	1 88	4 40
Dysentery	0 11	0 18
	7 11	6 02

LECTURES ON ASPHYXIATING GASES

The administration of the medical service has organized, in all the regiments of the entrenched camp at Paris, lectures on the asphyxiating gases employed by the enemy These lectures are given by an *aide-major*, who is a professor of chemistry and toxicology The lecturer, after showing the composition of the asphyxiating gases used by the Germans, explained that a humid alkaline barrier is sufficient for defense Improvised devices are not to be despised In default of appropriate masks the nose may be plugged with a damp handkerchief on which soap has been rubbed Experiments followed the lecture The lecturer shut himself and his auditors up in a room where they underwent the effects of a whole series of asphyxiating gases Each one made use of protective apparatus, the efficacy of which was thus clearly demonstrated.

MEASURES AGAINST ADULTERATED FOODS AND DRINKS

I mentioned in previous letters the brazen advertising of which the soldiers at the front are often victims Here is an example

> MINT ALCOHOL OF THE ARMIES
>
> Tonic. Refreshing Prepared according to the formula of the Académie de médicine. Prevents Diseases. Three drops in a glass of water sterilize the water Five drops give the best dentifrice Ten give the most healthful and refreshing of drinks

The manufacturer and vender of this product have been prosecuted for deception with regard to the nature and the quality of the goods sold The courts condemned each of the defendants to pay 1,000 francs ($200) fine because of the falsity of the therapeutic claims and of the statement that the product is prepared according to the formula of the Académie de medecine and also because reliance on the fraudulent preparation is likely to lead the public to refrain from taking necessary precautions to avoid diseases

AMERICAN GIFT TO THE ARMY

At the railway station of La Chapelle (Paris) a sanitary train of the American ambulance service has been put into operation This train, offered to France by a group of Americans, includes thirteen cars, especially arranged to receive from 240 to 250 wounded It weighs 450 tons and measures 260 meters in length (850 feet) It includes an operation room, kitchens and all modern conveniences Each hospital car contains twenty-four litters admirably hung A dining car and sitting-room car are for the service of the medical and sanitary staff of the train, and on each car are painted the French and American colors as well as the Red Cross

MENINGITIS DUE TO MUMPS

At the Reunion medicale de la VI-e armée, Dr Noël Fiessinger of Paris reported five cases of meningitis due to mumps which he had observed in a series of forty-one cases of the latter disease Of the five meningitis cases, four occurred in a little epidemic of twelve cases of mumps in a company of Algerian sharpshooters Meningeal complications occurred from the second to the fifth day in normal cases of mumps without being indicated by anything in the course of the parotid inflammation They manifested themselves first by a rise in temperature to 38.5 C. (101.3 F), by intense headache, accompanying symptoms of vomiting, *the neck was stiff*, there was a slight Kernig's sign, and lumbar puncture withdrew a clear fluid under pressure and containing excessive albumin and lymphocytes These complications were temporary, in two days they disappeared while the temperature fell to 37 C (98 6 F) For a while headache and vertigo and great general fatigue persisted Lumbar puncture relieved headache in every case It is important to detect these masked cases of meningitis, which often explain the difficult convalescence in certain cases of mumps The fact that Fiessinger had observed four cases of meningitis among Arabs shows that this complication should not be attributed especially to a nervous predisposition, but rather to the nature of the epidemic

THE SCHOOL OF MASSAGE FOR BLIND SOLDIERS

This institution founded in the convalescent home at Reuilly by Mme. A Leopold-Kahn, May, 1915, has just been definitely organized under the patronage of M J Brissac, director of the public charities and hygiene in the interior department The Ecole de massage des soldats aveugles is intended to train accomplished masseurs Several of its pupils will soon pass the examination which is to open the profession to them In Japan the profession of masseur is reserved for the blind, for delicacy and sensitiveness of touch no one with sight can equal them

BERLIN LETTER

Berlin, Jan 31, 1916

Personal

At the conclusion of the present semester, Professor Hasse, director of the anatomic institute in Breslau, will retire from his teaching position by reason of advanced age He was called to Breslau in 1873

April 1, Prof Albert Fränkel will retire from the position of director of the Hospital Am Urban in Berlin

The War

Repeated reports have been received from the field with regard to the occurrence of nyctalopia (night blindness) among the soldiers Professor Best of Dresden does not believe that nyctalopia is to be considered a condition peculiar to the war but rather a disease discovered as occurring among soldiers in the trenches, where service demands activity at night irregular meals, deprivation and strained attention, thus making unusual demands on mind as well as body, therefore such pathologic conditions are encountered but are not to be regarded as a particular war nyctalopia A somewhat different opinion is held by Dr Paul of Halle, the staff ophthalmologist Sixteen nyctalopes have been referred to him since the war began They were all strong, serviceable men, well nourished, and in no wise conveying the impression of lack of nourishment or bodily fatigue. Fourteen were members of the infantry, one was an artillery man and the other an engineer They had served in the forefront of activities Examination of the eyes failed to disclose any pathologic change The oculist in the field who examined these men failed to find any pathologic change, and therefore was inclined to believe that malingering might be considered Dr Paul was of the opinion that the nyctalopia in these cases was not of the type occurring in times of peace, and that it was a purely nervous affection due to nerve exhaustion and psychic depression, the result of the method of warfare in vogue during this war Dr Paul has not seen a case of *nyctalopia* since last May probably because the spring and summer weather had had a favorable influence on the psychic condition of the soldiers in the trenches The treatment of nyctalopia is similar to that of all nervous conditions, that is, avoidance of shocks to the nervous system

Progress in Roentgenography

At a recent session of the Berlin Medical Society, Dr K Lasser exhibited a new tube which, it is believed, will greatly simplify Roentgen diagnosis and therapeutics The anticathode in this tube is made of pure wolfram It does not become heated, and therefore the tube gives longer service than tubes in which the anticathode is made of different metal The anticathode consists of a spiral of wolfram enclosed in an iron cylinder The spiral is heated by means of a transformer The apparatus is regulated with regard to the formation of hard or soft rays by means of the tension curve of the current and the elevation of temperature. This apparatus is absolutely noiseless and enables one to make pictures showing great detail, and the work can be duplicated easily, a very important feature. Practically homogeneous rays can be produced

The Nourishment of Brain Workers

Dr Hindhede, director of the laboratory for observations on nutrition in Copenhagen, has published a remarkable article in the *Medicinische Reform* The American physiologist, Chittenden, recently published observations made on 108 students who were allowed an unrestricted choice in their food Thirty-six of these students, who ingested on an average 58 gm of albumin, failed to show any deterioration, either physical or mental, as a result of such restriction For twenty years Hindhede has been living on such an albumin-short diet, and during that time has enjoyed the best of health He has endeavored to ascertain whether the same state of affairs would continue under even greater restriction Hindhede, his assistant Madsen, and two students were the subjects of the experiment It was found that the minimum could be as low as 9 6 gm , in fact, for a short time 5 gm failed to influence mental or physical activity noticeably The depreciation is 60 per cent greater with hard labor than with moderate labor This is opposed to the old dictum that depreciation is the same at all times, during both work and rest, in other words, that the brain worker requires as much albumin as the laborer On the basis of 3,000 calories, the minimum is about 20 gm , somewhat less for light labor than for heavy labor This figure is in accord with that previously given as the minimum for meat food Hindhede is of the opinion, however, that meat, potatoes and bread albumin have the same nutritional value

LONDON LETTER

London, Feb 21, 1916

The War

TUBERCULOUS CASES ON ACTIVE SERVICE

Dr G S Banks, tuberculosis medical officer for Aberdeen, has issued an interesting report on sixty-four insured tuberculous persons, formerly in receipt of sanatorium treatment, who have joined the military or naval forces The number, Jan 12 1916, was 64, of whom 57 were on military and 7 on naval service Of the total, 58 were suffering from pulmonary disease, and of these, 34 had received sanatorium or hospital treatment for various periods One man actually enlisted while he was a patient in the tuberculosis wards of the city hospital Out of 64 who enlisted, 19 have recently been on active service, 14 at the Western front and 5 on mine sweepers Among six men discharged from the services, 1 had enlisted no fewer than three times before being finally discharged, and 3 had been discharged from one branch of the service and then enlisted in another As regards the severity of the disease, out of 48 pulmonary cases, 1 was of the first, 12 of the second, and 35 of the third stage Twenty out of 43 whose sputum had been examined gave a positive result Of the 14 cases at the Western front, of whom 3 were known to have had tubercle bacilli in the sputum, 4 were glandular and 10 pulmonary, and of these 10, 6 were in the second stage and 4 in the third From the fact that out of 14 men accepted for foreign service only 1 had broken down in health, and that only temporarily, Dr Banks concluded that the conditions of life in the field are not unfavorable to the maintenance of the general health of the tuberculous patient if the disease is not active or far advanced The common belief that a great risk to health inevitably follows a continued exposure to the rigors of winter is not corroborated by this experience, and any risk which may exist is more than counterbalanced by the general influence for good which attends life in the open air

EMERGENCY SURGICAL AID CORPS FOR ZEPPELIN RAIDS

The formation of this corps was announced in a previous letter At a meeting held at the Royal Society of Medicine, the chairman, Sir Rickman Godlee reported that two distinct duties had been imposed on the executive (1) that of arranging for assistance in the case of raids of any description on the East Coast from Dover to the Wash, and (2) that of organizing for similar help in the case of aerial raids on the metropolis Since the starting of the corps, 155 practitioners had volunteered to serve Of these a considerable number have been obliged to retire, owing to having undertaken other military duties, but 107 names still remained There had been nine calls to date—two for the East Coast and seven for London On eight occasions the corps was asked to "stand by" till danger appeared to be over, and was at length told that it might disperse On the last occasion the summons did not reach them till one hour after the disaster, and by the time the corps arrived on the scene (within ten minutes of the call) all the wounded had been taken away As a result of a private call, some of the corps went to a large hospital and were kept very busy till a late hour Surgeon-General Culling then tendered the warm thanks of the War Office to the members of the corps for the generous way in which they had spontaneously taken on themselves such important duties He assured them that the mere knowledge that there was such a body to fall back on in case of need was a source of great comfort to the War Office, and he added that he was authorized to say that the need for their services was graver than ever, and he believed that before long they would find more than enough to do

THE EPIDEMIC OF CEREBROSPINAL MENINGITIS IN THE MILITARY CAMPS

After the outbreak of the war, when the new army was being formed and large numbers of young men were congregated in camps, in some of which cerebrospinal meningitis became epidemic, the Medical Research Committee (a body, as stated in previous letters, formed under the insurance act for the purpose of investigating disease), in conjunction with the War Office, appointed an advisory committee in the spring of 1915 consisting of three well-known bacteriologists, F W Andrews, William Bulloch and T R Hewlett. The activities of this committee extend over the whole country, and twenty-four cerebrospinal fever laboratories were established A very important report has now been issued A general conclusion arrived at is that the epidemic was not one of cerebrospinal fever as such, but was an epidemic of the meningococcus in the throats of the population at large It was an epidemic prevailing in winter and spring, because at these seasons people are in closer contact with each other indoors The conditions of camp life and barrack life render it preeminently liable to affect the military population It prevails much more in towns than in the country for the same reason The actual cerebrospinal fever is due to the fact that in some cases the germ passes from throat and nose to the brain and spinal cord It does not pass in many cases, and why it should pass in some cases and not in others is obscure In London during the spring and early summer the microbe was found in 10 per cent , and, another time in 13 per cent of persons examined, who had not been in contact with the disease The difficulty is to explain the escape of these carriers, and the failure of others to escape ' It is suggested that "from time to time and hitherto very rarely in this country individual races (of the germ) attain a greater virulence, and their saprophytic spread is attended, not only by a larger number of cases of meningitis, but also by the attack of young adults who in ordinary circumstances are immune There seems to be ground for the belief that at least one out of the three principal strains concerned in last year's epidemic was introduced by the Canadian troops"

With regard to treatment, four different kinds of serum were used, but the results were not very encouraging, and judgment is suspended meanwhile In two cases serum derived from a patient who had recovered was injected with "almost dramatic results" In one case the patient received benefit from the injection of serum taken from himself Vaccines were also employed, but the general experience of vaccine treatment seem to have been little more favorable than that of serum Two of the reports speak of the use of vaccine as a safeguard against the disease Twelve exposed to infection were vaccinated None of them developed the disease Again, seventy-nine "carriers" were inoculated, and no case of the fever arose among them One case occurred among forty-nine carriers not inoculated

BUDAPEST LETTER

Budapest, Feb 10, 1916

Rules for Physicians in the Care of the Eye

Prof Emil Gross of the Budapest University has compiled the following instructions, which are circulated among all the physicians of the Hungarian army

1 Put a protective dressing on an injured eye On the eyelids place sterilized gauze loosely, then a piece of wadding and next a bandage

2 This dressing should be changed after twenty-four and at the latest forty-eight hours, because the conjunctiva of the injured eye produces secretion

3 For cleansing the eye the most suitable solution is a 3 per cent boric acid solution—strong antiseptics are harmful

4 Dilate the pupil by instillation of a 1 per cent atropin solution, but if the tension of the eyeball is increasing (this can be controlled by palpation of the eyeball with the index

fingers), *stop atropin instillation*, in this case 1 or 2 drops of a 2 per cent pilocarpin solution are indicated

5 Small entrance opening, internal hemorrhage, or consecutive gray cataract arouse the suspicion of the presence of a foreign body, in most cases it is of metal The diagnosis must be verified with the Roentgen ray, in case it is iron, with the sideroscope The patient should be sent, without delay, to an eye clinic or an eye hospital, where an iron splinter can be removed with a magnet or with operation A delay of even a single day may be fatal to the eye!

6 The remains of bruised eyes or severely injured eyes, which do not possess light vision, should be removed in the interest of the other eye If there are symptoms of iritis or inflammation of the ciliary body and there is no light vision, the removal of the eyes must be regarded as urgent The enucleation of the eye shall be performed with the sparing of the conjunctiva and muscles, for otherwise the cavity is not fit for the wearing of an artificial eye The removal of metal splinters impacted in the orbit and causing no reaction, is not necessary

7 The earliest possible repair of defects of the eyelid is to be performed, and similarly the restoration of eventerated eyelids

8 Suppurative conjunctivitis is contagious, such eyes should not be dressed, and the secretion must be washed out frequently The sound eye is to be protected Such patients should be sent to eye hospitals

9 Trachoma can be diagnosed, sometimes, only by turning the upper eyelid up and finding in the transitional fold the characteristic nodules, hypertrophies and radiary scars

The Rise of the Price of Certain Drugs

In view of the immense demand for certain drugs and the difficulties of importation the minister of public hygiene has issued an order which permits the chemists to charge higher prices for certain drugs Of course, this increase of price is temporary and whenever the drugs are manufactured within the country, which will probably be soon, the increased prices will drop to normal Among the drugs are preparations containing benzin, collodium flexile, camphor, mercury, linseed oil, castor oil, turpentine, chloroform and many ointments

The Gallantry of Professor Eiselsberg

About four weeks ago Konstantin, King of Greece, telegraphed for the services of Professors Kraus and Eiselsberg, of the Vienna University King Konstantin had to undergo an operation for empyema of the thorax, which was successfully performed by Professor Eiselsberg King Konstantin paid a fee of 50 000 francs to Professor Eiselsberg This fee the professor offered to the Bulgarian Red Cross, which in gratitude enlisted him as an eternal honorary member of the society

The Right to Perform Operations on Soldiers

The minister of home defense has issued the following order In all cases in which sick or wounded soldiers need operations, which are in themselves not dangerous, and the fitness for service depends entirely on the performing of the operation, the military surgeon has the right to perform the operation on his own responsibility without the consent of the patient

Pathologic Conditions After Vaccination Against Typhoid

Dr Masko has seen pathologic conditions after vaccinations against typhoid in sixty-one out of 3,000 patients treated in a garrison hospital In all these cases there were more or less general reactions after the vaccinations These consisted of fever, and pains in the head, limbs, joints, back and chest In nine cases he observed rheumatic arthritis, which proved benign, with one exception, the patients recovering within one week, this rheumatism did not very much improve on treatment with salicylic acid and collargol, but it readily improved on application of hot air In four cases symptoms of nephritis made their appearance In three cases latent apical processes have become peremptorily acute ones, and in one case miliary tuberculosis has occurred after the inoculation Bronchitis of short duration occurred in practically all of these cases In thirty-five cases severe diarrhea supervened, in two cases latent dysentery became acute In many cases the whole upper abdominal region became painful, the liver was tender on pressure, in four cases the spleen became swollen, in five cases roseolae appeared, which disappeared very quickly Scarlet fever-like rashes have been observed in three cases, in every instance twenty-four hours after the second inoculation, they disappeared without any trace, without scaling off of the skin, in these three cases the condition of the patient was severe, the fever 39 C (102.2 F) subsiding only after the fourth day In one case the rash was similar to measles in another case to erythema nodosum In two cases the inguinal glands became enlarged, were painful, and the patients were feverish through several days In eleven cases a condition similar to typhoid occurred, and the pathologic appearances were severe Dr Masko regards this condition as a toxemic one and calls it "typhotoxicosis" In some cases Dr Masko observed a strong Ehrlich diazo reaction, and on this ground he is of the opinion that in consequence of the typhoid vaccination, not only bactericidal and antitoxic substances appear in the blood, but also peculiar changes take place in the lymph apparatus and particularly in the lymph system of the intestinal tract, so that blood reacts more quickly and strongly against the typhoid bacilli and their toxins However, considering the brilliant results of the antityphoid vaccinations, the described disagreeable by-effects must not prevent us from administering them In private practice it is advisable to draw the attention of the patient to the possibility of reaction On account of this possibility, soldiers should be given three or four days' freedom from service after vaccination Dr Masko used the Besredka vaccine

Association News

THE AMERICAN MEDICAL GOLFING ASSOCIATION

At the last annual session of the American Medical Association, the American Medical Golfing Association held its first tournament in San Francisco, June 21, 1915 An organization was completed with the following officers president, Wendell C Phillips, New York, vice president, James Eaves, San Francisco, secretary-treasurer, Will Walter, Chicago Plans are being made for the second tournament, to be held in Detroit in connection with the annual session of the Association The by-laws provide that any Fellow of the Association who shall pay an enrolment fee of $2 becomes a perpetual member When a member participates in the tournaments of the Association he shall pay a playing fee of $1, the green's fee, charged by the local club, and the annual dinner fee, as determined by the local committee (if he desires to participate in the annual dinner and meeting) Further information may be obtained by addressing the secretary-treasurer, Dr Will Walter, 122 South Michigan Avenue, Chicago

Marriages

Capt Herbert H Sharpe, M C., U S Army, Fort Davis, Alaska, to Miss Marshalle Bates Jones at Nome, Alaska, December 20

Maj Conrad E Koerper, M C, U S Army, Philadelphia, to Miss Florence Marguerite Bateman at Fort Clark, Texas, March 15

Capt Daniel F Maguire, M C, U S Army, Fort Ontario, N Y, to Miss Fannie Renshaw of Pensacola, Fla, February 16

Emanuel Zachary Shapiro M D, Duluth, Minn, to Miss Edna M Baker of Virginia, Minn, at Duluth, February 17

James John McDevitt, M D East Boston, to Miss Augusta Hanss Sargent of Worcester, Mass, February 29

Grover Augustus Stem, M D, Westminster, Md, to Miss Irene Miller of Baltimore, in September, 1914

Clarence Homer Kemp, M D, Elmwood, Ill., to Miss Pauline Miller of Lacon, Ill, February 25

John O'Connell, M D., St Louis, to Miss Uceyle Risch Maloney of Shreveport, La, March 1

Louis Sternberg, M D, New York City, to Miss Henrietta Gluckman of Brooklyn, February 23

Frank Martin, M D, Baltimore, to Miss Elizabeth Prescott Bigelow of Boston, March 1

Loraine A Marty, M D, to Miss Olive B Musser, both of Kansas City, Mo, January 11

Abraham Risel Hollender, M D, to Miss Anna Winsberg, both of Chicago, March 1

Deaths

William Louis Rodman, M D, Philadelphia, aged 57, president of the American Medical Association, died at his home, March 8, from pneumonia, after a short illness

Dr Rodman was born in Frankfort, Ky, Sept 27, 1858 He was the son of General John Rodman, who for many years was Attorney General of Kentucky His preliminary education was received at the Kentucky Military Institute, from which he was graduated in 1875, with the degree of M.A He later received the degree of LL D from his alma mater He commenced the study of medicine under the preceptorship of his uncle, Dr James Rodman, and his cousin, Dr W B Rodman, and graduated from Jefferson Medical College in 1879 After a service as intern in Jefferson Hospital, he entered the United States Army as acting assistant surgeon and for nearly two years was stationed at Fort Sill

In 1882 Dr Rodman was married to Betty C Stewart, daughter of the late Dr T Q A Stewart, a well known alienist of Kentucky He then practiced for about two years in Abilene, Texas, after which he removed to Louisville and was appointed demonstrator of surgery in the Medical Department in the University of Louisville and clinical assistant to Dr David W Yandell He held this position from 1889 to 1893, when he resigned to accept the professorship of surgery in the Kentucky School of Medicine, Louisville In September, 1898, he was made professor of principles of surgery and clinical surgery in the Medico-Chirurgical College of Philadelphia, and moved to that city From 1900 to 1908 he was also professor of surgery and clinical surgery in the Woman's Medical College of Pennsylvania, Philadelphia

William Louis Rodman, M D, 1858-1916

The work of Dr Rodman in the American Medical Association is recognized in an editorial in this issue Dr Rodman was president of the Association of American Medical Colleges in 1902 and 1903, and it was largely through his efforts as president of this organization that the National Board of Examiners became possible Dr Rodman was deeply interested in this project of standardization of examination for medical licensure and was instrumental in securing the financing of the work He was also president of the Philadelphia Medical Club in 1910, and was a member of the College of Physicians of Philadelphia, the American College of Surgeons, American Surgical Association, International Surgical Association, and Association of Military Surgeons of the United States He was also a member of the staff of Blockley and the Presbyterian hospitals, Philadelphia In 1915, Dr Rodman was commissioned first lieutenant, Medical Reserve Corps, U S Army

His chief contributions to the literature were the oration on "Gastric Ulcer", a paper on "Cancer of the Breast" read before the British Medical Association in 1904, a monograph on "Diseases of the Mammary Gland," which appeared in 1908, and chapters contributed to the "International Text Book of Surgery," Keen's "System of Surgery," and Bryant and Bush's "Practice of Surgery"

He is survived by his widow and three children, Dr J Stewart Rodman, who was associated with his father in practice, Miss Virginia Rodman and Mrs Lincoln Godfrey, Jr

Wisner Robinson Townsend, M D, New York City, aged 59, fell from a window of his apartment, March 12, and was instantly killed

He was born in Clifton, N Y, Aug 5, 1856, the son of Wisner Helme and Emily Kyle Townsend He received his A B degree at Columbia University in 1877, graduating three years later from the College of Physicians and Surgeons in the City of New York In the same year he was given his master's degree by his alma mater He had practiced in New York since his graduation

He was a Fellow of the American Medical Association, second vice president in 1914-1915, a member of its House of Delegates from 1906 to 1908, a member of the Board of Trustees from 1908 to 1911, and secretary of the board for the last two years of that period He had been secretary of the Medical Society of the State of New York since 1896, and for twelve years he had been secretary of the board of trustees of the New York Academy of Medicine He was also a member of the American Orthopedic Association and its president in 1899, and was president of the New York State Association of Railway Surgeons in 1902 He was professor of orthopedic surgery in the New York Polyclinic, associate surgeon to the Hospital for Ruptured and Crippled, orthopedic surgeon to the French Hospital, New York, consulting orthopedic surgeon to the J R Smith Infirmary, Staten Island, and consulting surgeon to the Bayonne (N J) Hospital, and was a voluminous contributor to the literature of orthopedic surgery

Dr Townsend had been in bad physical condition for a considerable time, suffering from diabetes and frequent attacks of vertigo, and of late had been a victim of insomnia It is believed that he had attempted to open the bathroom window, which was only about 2 feet from the floor, and seized with vertigo, fell to his death

Dr Townsend was a man of great executive ability and winning personality, and his tragic death comes as a great shock to his many professional friends throughout the United States He is survived by a widow and two sons

Charles M Thomas, M D, Philadelphia, Pa, Hahnemann Medical College, Philadelphia, 1871, aged 66, from 1875 to 1878 demonstrator of surgery in his alma mater, from that date to 1891 professor of operative surgery, ophthalmology and otology, afterward emeritus professor of ophthalmology and otology and dean of the college from 1903 to 1906, died at his country home near Westchester, January 14

George Huntington, M D, Cairo, N Y, College of Physicians and Surgeons in the City of New York, 1871, aged 65, formerly a Fellow of the American Medical Association, a member of the Medical Society of the State of New York, president of the Dutchess County (N Y) Medical Society in 1888, for whom Huntington's chorea was named, visiting physician to the Matteawan General Hospital, died at the home of his son in Cairo, March 3, from pneumonia

Daniel Elisha Foote, M D, Belvidere, Ill, University of Buffalo N Y, 1851, aged 87, formerly a Fellow of the American Medical Association, a member of the Illinois State Medical Society, for sixty years a resident of Belvidere, in the early fifties, surgeon of the Fifty-Seventh Infantry, New York State Militia, for several terms coroner of Boone County and a member of the school board of Belvidere, died at his home, February 22.

John Thomas Dickes, M D, Portland, Ind Medical College of Indiana, Indianapolis, 1885, Kentucky School of Medicine Louisville, 1885, aged 58, a Fellow of the American Medical Association, coroner of Jay County from 1890 to 1892, and until two years ago county health commissioner and secretary of the County Board of Health, for thirty years a practitioner of Portland, died at his home, February 28 from heart disease

Thomas Henry Mann, M D, Bolton Conn, Albany (N Y) Medical College 1870, aged 72, formerly postmaster of Fitchburg and editor of the Fitchburg (Mass) *Evening Mail*, and also of the Milford (Mass) *Daily News*, a veteran of the Civil War and a prisoner at Andersonville, at one time a member of the staff of Governor Littlefield of Rhode Island, died at his home, March 2

John W Ayler, M D, Newport News, Va, Medical College of Virginia Richmond, 1864, aged 77, a member of the Medical Society of Virginia, and one of the oldest practitioners on the Virginia Peninsula, surgeon in the Confederate service during the Civil War, formerly city physician of Newport News, died at his home, February 28, from cerebral hemorrhage

Edward Joseph Stone, M D, Cleveland, Ohio, Bellevue Hospital Medical College 1880, aged 58, for many years a practitioner of Oneida N Y, once president of the Tioga County Medical Society and health officer, who had for many years devoted his attention exclusively to life insurance work, died suddenly, February 19, in his office in Cleveland

Orlyn Lee Chaffee, M D, Waverly, Iowa, Chicago Homeopathic Medical College 1902, aged 39, a member of the Iowa State Medical Society and once president of the Bremer County Medical Society, who had been operated on at Mercy Hospital, Waverly for gastric ulcer and gallbladder disease, died from pneumonia, March 2

Timothy Griffith, M D, Frostburg, Md, New York University, New York City, 1888, aged 54, vice president of the Allegany and Garrett County Medical Society, member of the Board of Health of Frostburg, once vice president of the Medical and Chirurgical Faculty of Maryland, died at his home, March 2 from nephritis

Edward Fayette Eldridge, M D, San Diego, Calif, Dartmouth Medical School, Hanover, N H, 1882, aged 60, for many years a practitioner of Grand Junction, Colo., where he was surgeon to the railways centering at that city, author of several novels and poems characteristic of the West, died at his home, March 8

Andrew Jackson Butler, M D, Unadilla, N Y, Rush Medical College, 1891, aged 47, a Fellow of the American Medical Association and a well known practitioner of Otsego County, N Y, died at his home, March 4 from the effects of an incised wound of the throat, self-inflicted, it is believed, with suicidal intent

Herbert Roland Bowers, M D, Lancaster, Pa, Jefferson Medical College, 1889, aged 48, formerly a member of the Medical Society of the State of Pennsylvania, surgeon to St Joseph's Hospital, Lancaster, was struck and killed by a Pennsylvania train at Edgewood Station, near Pittsburgh, February 26

William Theophilus Stuart, M D., Toronto, University of Toronto, 1877, Trinity Medical College, Toronto, 1877, aged 62, for many years professor of organic chemistry in his alma mater, one of the organizers and major of the Forty-Eighth Highlanders, died in Oakville, Ont, November 13

Erastus J Lyons, M D, Lake Charles, La, New Orleans, School of Medicine, 1861, aged 76, for more than half a century a practitioner of Calcasieu Parish, La, died at his home, February 17, from senile debility

Edwin Landis Detwiler, M D, Herndon, Va, Jefferson Medical College, 1886, aged 55, a member of the Medical Society of Virginia, was shot and instantly killed, February 29, near Herndon, by a farmer who had been an inmate of the State Hospital, but had been released on parole

Raymond Jesse Nate, M D, Chicago, Rush Medical College, 1892, aged 45, was fatally injured, March 10, by the falling of a weighing machine in front of a drug store at Thirty-Ninth Street and Cottage Grove Avenue, and died while being taken to the Lakeside Hospital

Edwin William Poinier, M D, Huntington, Ind, College of Physicians and Surgeons, Chicago, 1902, aged 36, a Fellow of the American Medical Association, for ten years a practitioner of Andrews, Ind, and county physician of Huntington County, died at his home, March 6

George W Tarlton, M D, Cape Girardeau, Mo, Washington University, St Louis, 1881, aged 55, a member of the Missouri State Medical Association, died at his home, December 13 from arteriosclerosis, associated with interstitial nephritis and mitral regurgitation

Harry David James, M D, Chicago, Dearborn Medical College, Chicago, 1907, professor of ophthalmology in the Chicago Eye Ear, Nose and Throat Hospital, died at his home, January 27, from pneumonia

Robert F Baker, M D, Sparta, Tenn, Bellevue Hospital Medical College 1865, aged 70, a member of the Tennessee State Medical Association, died at his home near Fancher s Mills, Tenn, about February 18

Meridith Caton Kimball, M D, Converse, Ind, Cincinnati College of Medicine and Surgery, 1874, aged 69, a well-known practitioner and clergyman, died at his home February 24, from heart disease

George O Williams, M D, Greene, N Y, Albany, N Y, Medical College, 1866, aged 72, a Fellow of the American Medical Association, died at his home in Greene, February 24 from bronchopneumonia

William Leet Kreider, M D, Prairie City, Ill, Rush Medical College, 1859, aged 84, for more than sixty years a practitioner of Prairie City, died at his home, February 19, from cerebral hemorrhage

Samuel Armstrong Aiken, M D, Cambridge Neb, New York University, New York City, 1887, aged 55, died February 18, while driving his automobile near his home in Cambridge, from heart disease

George Mason Foskett, M D, Worcester, Mass, University of Vermont Burlington, 1883, aged 59, a member of the Massachusetts Medical Society, died at his home in Worcester, February 23

George D Dresser, M D, New York City, New York Homeopathic Medical College, 1874, formerly of Shrub Oak, N Y, aged 67, died at his home, February 23, from intermittent fever

George Edward Flood, M D, Chicago, Detroit Medical College, 1879, aged 59, died in the Washington Park Hospital, Chicago, February 28, from uremia, after a surgical operation

Oscar Howard Morris, M D, Coolidge, Ga, Southern Medical College, Atlanta, 1898, aged 40, died at his former home in Rockmart, Ga, February 20, from hemorrhage of the lungs

John Fawcett, M D., Lents, Ore, Manitoba Medical College, Winnipeg, 1886, aged 59, died at his home in Lents, Portland, Ore, February 8, from Hodgkin's disease

Leonard Adair, M D, New York City, New York University, New York City, 1896, aged 45, died at his home in Harlem, N Y., February 24, from nephritis

Henry John Hertz, M D, Zearing Iowa, State University of Iowa, Iowa City, 1909, aged 30, died in a hospital in Iowa City, February 18, from heart disease

T W Cooper, M D, Beech Grove, Ky, Kentucky School of Medicine, Louisville, 1875, aged 74, died at his home, February 18, from valvular heart disease

N B Cotton, M D, Bentonville, Ark, Western Reserve University, Cleveland, 1863, aged 69, died at his home, February 22

Correction—The death notice of Dr William Hammond Eaton of Adrian, Minn, which appeared in The Journal of March 11, page 830, is incorrect Dr Eaton is alive and did not have the accident referred to

Resolution Endorsing the Work of the Council on Pharmacy and Chemistry

Presented at the San Francisco Session and Signed by All the Members of the House of Delegates in Attendance—(See Journal A M A, July 3, 1915, p 70)

Resolved, We, Members of the House of Delegates of the American Medical Association, believe that every effort must be made to do away with the evils which result from the exploitation of the sick for the sake of gain Earnestly believing that the continued toleration of secret, semisecret, unscientific or untruthfully advertised proprietary medicines is an evil that is inimical to medical progress and to the best interest of the public, we declare ourselves in sympathy with, endorse and by our best efforts will further the work which has been and is being done by the Council on Pharmacy and Chemistry of the American Medical Association in the attempt to eliminate this evil

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E S Crane

OHIO

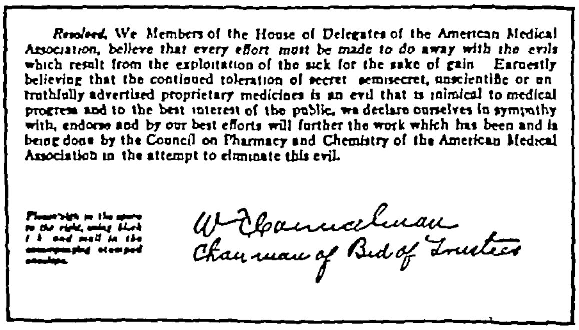
Alonzo B Walker

H. C. Haning

OKLAHOMA

W Albert Cook

Walter Penquite



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W T Councilman
Chairman of Bd of Trustees

Facsimile of Card Signed by Delegates

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J H McBride

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Ernest Dwight Chapman

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John Ridlon

Correspondence

Subacromial Bursitis

To the Editor —In the March, 1915, issue of the *American Journal of the Medical Sciences,* I published an article discussing "Prevalent Fallacies Concerning Subacromial Bursitis Its Pathogenesis and Rational Operative Treatment" Among other points I emphasized the following The calcareous deposit often found in these cases is not, as generally believed, in the bursa, but beneath it, in or on, or in and on, the supraspinatus tendon or, occasionally, the infraspinatus, and "excision of the bursa," recommended as a routine operative treatment by some textbook writers and others, is not only unnecessary but, in fact, cannot be performed "without a mutilating dissection" because of the extent of this large bursa and its intimate relations with the neck of the humerus and the capsule of the shoulder joint My contentions were based on the study of many cases clinically, cadaver dissections and, at that time, seven operations

In The Journal (Jan 22, 1916, p 264), Dr Albert H Montgomery of Chicago reported a single case of subacromial bursitis in which he had operated, on the basis of his observations and deductions in which case he disputed all of my contentions Some of these I shall consider again in a forthcoming article I wish here to reply, very briefly, to the two more important assertions of Dr Montgomery, that he found the lime deposit in the outer wall of the bursa and that he extirpated the bursa I quote from his report "The space between the shadow and the humerus is so wide that it would scarcely seem possible that the lime salts responsible for it could be within the tendon The amorphous masses of lime salts were deposited in the upper wall of the bursa Notwithstanding the statement of Wrede and Brickner, extirpation of the bursa is possible [Wrede made no such statement, as I recall his article in the *Archiv für klinische Chirurgie,* 1912, xcix, 259, but merely reported a single case of subacromial bursitis in which he found the deposit within the supraspinatus tendon] The calcium deposits were confined to the upper wall of the bursa The wall lying on the humerus and supraspinatus tendons [?] was intact, and the tendon of the supraspinatus muscle appeared normal After extirpation of the bursa I believe that the best treatment, however, is excision of the bursa which is possible even without a mutilating operation This case is so typical both in Roentgen-ray and operative findings as to leave no doubt that the bursa is the structure primarily involved, and disproves the rather dogmatic statements of both Wrede [*vide supra*] and Brickner"

That the deposit in Montgomery's case could scarcely be within the tendon because of the wide space between its shadow and that of the bone is a pure assumption and a faulty one I have several roentgenograms quite like Montgomery's, and with the shadow equally far from that of the humerus, from cases in which, nevertheless, the deposit *was* found within the supraspinatus tendon, and in my article I stated that "the shadow may be separated by a wide space from the bone"

In a personal communication to me, Dr Montgomery wrote *"In speaking of extirpation of the bursa, I referred only to the diseased portion"* And yet, in a scientific discussion, he had repeatedly said that he "extirpated the bursa" and, disputing my anatomic contention, he advised this as the best treatment

Just as he was admittedly in error in his published statement that he extirpated the bursa, and jumped to a hasty and insupportable interpretation of his Roentgen picture, so, too, I am sure, from my findings in fifteen operations and from the corroboration of other surgeons, that Montgomery was mistaken in believing that he found the lime deposit in the outer wall of the bursa These walls are often very thin and are apt to be very adherent over the deposit (Montgomery made no mention of the contents of the bursa), and (as I emphasized in my article above referred to) unless they are first separated by a nice dissection, one is very apt, especially at his first operation, to believe that the lime deposit lying under the bursa, and often there adherent to its inner wall, is within the sac or its outer wall In his article Montgomery stated that the inner wall of the bursa appeared normal, in his letter to me he said that he *curetted off* this [normal] wall! This supports my conviction that he had not precisely differentiated the structures

Walter M Brickner, M D, New York

Constipation in Causation of Epilepsy and Migraine

To the Editor —Dr Strate's inquiry (The Journal, Feb 26, 1916, p 675) is of the kind precisely calculated to bring out essential facts and straighten out apparent inconsistencies, or, as I prefer to think, to fill out possible omissions in my statement of the causal relationship between constipation and epilepsy Dr Strate says "A symmetrical edema of both internal capsules is of course possible, but shall we say it is probable?" I fancy the answer is to be found in going back to the initial factor in the causation of the disease, and then following sequent phenomena up to the seizure This, briefly stated, is as follows

1 Epilepsy is an infection due to a specific organism, the primary habitat of which is the alimentary canal, more especially the cecum

2 Distortions and displacements of the intestines, more especially of the colon and cecum, cause constipation and thereby force the absorption of the organism into the circulation

3 The organism would seem to exercise a selective action on the internal capsule, the intermediate but sequent pathologic changes being (*a*) bacteremia with associated toxemia, (*b*) acidosis involving the entire system, and (*c*) edema of various structures and organs, but focalizing apparently by selective action at the internal capsule, both sides being considered as one

It is the wide diffusion, the systemic extent of these pathologic changes that needs to be kept in mind When this is done, does it not seem that the law of probability would incline to symmetrical rather than to unilateral or even more definite localization of the terminal edema? That such localizations do occur in individual cases is, however, a fact of frequent observation In the absence of positive knowledge on the subject, may we not in a measure satisfy our logical instincts by assuming that the various conduction paths have varying powers of resistance in various persons? At any rate, why should a general infection focalize on one side rather than another?

When Dr Strate states that my theory would more nearly account for "a typical migraine with its unilateral headache hemianopsia, diplopia," etc, it would seem again that he has overlooked infection as the fundamental factor in epilepsy—an oversight for which I fear the arrangement of the text in my explanation of the disease is in a measure responsible As a matter of observation, the symptoms referred to as well as other strictly neurotic symptoms are but rarely encountered among victims of the epileptic infection, the specific organism of which is now daily demonstrated in my cases It is this infection that is constantly to be kept in mind, not only in the interpretation of the epileptic phenomena, but also, now that we have the organism, in the formulation of treatment, both medical and surgical

Charles A L Reed, M D, Cincinnati

The Fingers of Primitive Man

To the Editor —In the fragmentary published reports of the art of the cave man, referred to recently in The Journal (Feb 12, 1916, p 513), accurate details of even obvious things seem to be lacking

In the outline drawings of the human hand it would be important to know which hand was used as the object of illustration Some ethnologists believe that primitive man was left handed, and this led to the inference that "backward" writing like that of the Semitic language was the result of this lefthandedness

It would be more logical to assume that primitive men lost their fingers in combat with fellow men than to infer that it was the result of a sacrificial rite or from the trauma from defective weapons With the presumptive limited range and efficiency of primitive weapons, hand to hand combat must have been the rule It would seem entirely probable that the teeth would play an important role in this weaponless warfare, and that the fingers of a combatant would be the most vulnerable point of attack as actually takes place in the jungles of Africa today

The vicissitudes of man's early environment would logically be opposed to a theory that he voluntarily removed his most useful members J H Mackay, M D, Houston, Texas

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address but these will be omitted, on request.

METHYL ALCOHOL AS A FUEL

A correspondent writes

There is some question in the minds of some of us as to whether the enclosed item accords with the others on the subject which you have published in previous issues and with the actual facts as they have been clinically demonstrated We trust we are not asking too much of you when we request that you let us have a line or two on this subject either verifying the item enclosed or pointing out wherein, if at all, it is erroneous and, whether or not it is erroneous, whether it may not in your opinion contain advice which might be dangerous to give to the laity

Answer—Our correspondent refers to a reply to a previous correspondent (Jan 15, 1916, p 209) in which we said 'There is no reason to believe that methyl alcohol as a fuel possesses any special dangers or disadvantages The products of its complete combustion are the same as those of the combustion of ethyl alcohol, namely, water and carbon dioxid"

Our present correspondent's point is well taken The danger of poisoning from methyl alcohol used as a fuel is probably slight, yet our answer should have pointed out the possibility of toxic effects from incomplete combustion Two cases of poisoning attributed to wood alcohol used as a fuel are on record

THE REQUIREMENTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY

To the Editor—I have been reading with interest the reports of the Council and have several of the volumes of reports of the work done Where can I find the data with reference to the requirements of the Council in order that the products of manufacturers may be accept able in a scientific, ethical and therapeutic sense?

I am prompted to make inquiry because at medical society exhibits I am at times at a loss to place properly some products so freely sampled

Again I have noted that at times a preparation starts out all right and seems to fill a place in daily work and later I have noted newspaper exploitations of that which was started by physicians

With the right data at hand I intend to include a few references in papers and essays that will gain attention to some points so necessary for us to keep in mind as I believe the Council is doing a big work along its chosen line Thomas M Stewart M D, Cincinnati

Answer—The information asked for by our correspondent will be found in the Official Rules of the Council on Pharmacy and Chemistry, which appear in New and Nonofficial Remedies (pp 9 21 of the 1916 edition) These rules may also be obtained in pamphlet form by sending a 2 cent stamp to the Secretary of the Council, 535 North Dearborn Street, Chicago

These are the rules by which the Council is governed in admitting articles to New and Nonofficial Remedies As will be seen, they merely require that the composition of the remedy be nonsecret, that its uniformity be safeguarded, that no false claims be made regarding its therapeutic properties, and that its use shall be based on at least a probability of therapeutic merit Any one who has sufficiently broad knowledge (which must include knowledge of pharmacy, pharmacology and chemistry as well as of medicine) can apply these rules, although in many cases it will be found difficult as well as tedious to obtain the evidence necessary to pass *judgment* on a single preparation

Practically, the labor of critically examining and judging all the various *proprietary* preparations which physicians are asked to prescribe would be an intolerable burden for any one man, be he ever so well qualified Even with all the resources of the Council on Pharmacy and Chemistry, the task is *not* a *simple* one The easiest way to learn whether or not a certain preparation complies with the Council's rules is to see if it is described in New and Nonofficial Remedies

The work of the Council on Pharmacy and Chemistry, and the principles on which it is conducted, are discussed in Sollmann's 'Broader Aims of the Council on Pharmacy and Chemistry" and in Simmons' 'Work of the Council on Pharmacy and Chemistry Its Effect on Medical Progress" Either of these pamphlets will be sent on receipt of a self-addressed stamped envelope

LARKSPUR FOR PEDICULOSIS

To the Editor—Please send me a formula for preparing larkspur for use in cases of pediculosis capitis J P Q

Answer—The following formula is recommended by Otto Raubenheimer (*Journal of the American Pharmaceutical Association*, October, 1912, p 1138)

Delphinium ground	100 gm
Acetic acid	50 c c
Glycerin	50 c c
Alcohol	100 c.c.
Water, a sufficient quantity to make	1,000 c c

Boil the ground larkspur seed with 800 c c of water, to which the acetic acid and glycerin have been added, for ten minutes in a covered vessel, set aside till cold, then add the alcohol and allow to macerate over night Then filter and add sufficient water through the filter to make the product measure 1,000 c c

Among other formulas which have been suggested in various drug journals are the following

Larkspur seed, ground	8 ounces
Green soap	2 ounces
Potassium carbonate	1 ounce
Oil of lavender flowers	1 dram
Alcohol	24 ounces
Water	8 ounces

Macerate for ten days with occasional agitation and filter, adding enough of a mixture of alcohol 3 parts and water 1 part to make 32 fluidounces, or the tincture may be prepared by percolation after maceration for a few days

The following formula is said to be cheaper and to be more easily made than ordinary tinctures

Larkspur seed	100 gm
Potassium carbonate	10 gm
Alcohol	500 c.c.
Water to make	1,000 c.c.

Mix the seed and the carbonate with 500 c c. of water, boil the mixture for five minutes, when it has become cold, add the alcohol, strain, and add enough water to make the finished product measure 1,000 c c Filter, if not clear

Larkspur seed	4 ounces
Boiling water	6 ounces
Alcohol	10 ounces
Diluted alcohol to make	1 pint

Crush the seed in an iron mortar, transfer them to a suitable vessel, pour the boiling water on them, cover the vessel and let the whole stand until cool, add the alcohol, stir well, and after twenty-four hours, filter through cotton

Larkspur is poisonous, and if there are abrasions of the skin it may be harmful It is not mentioned in connection with the treatment of pediculosis by many medical writers who prefer kerosene The latter is applied under a suitable cap and left on about twenty-four hours The hair is then thoroughly combed with a fine comb to remove the nits, after which it is thoroughly washed

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Practice and Scientific Medicine—Some practitioners of medicine, as we all know, have made little progress as the science has been developed They practice the same way they did years ago and look on modern methods of diagnosis and treatment as absurd in the extreme They make no attempt to familiarize themselves with medical literature, nor do they utilize the laboratory to aid them in their work It should be stated in fairness also, I regret to say, that the foregoing statements apply with equal force to some of our younger practitioners—E F McCampbell, *Ohio Public Health Journal*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona Phoenix, April 4 5 Sec, Dr John Wix Thomas, 200 National Bank of Arizona Bldg, Phoenix

California Los Angeles, April 4 Sec, Dr Charles B Pinkham, Room 527 Forum Bldg, Sacramento

Colorado Denver, April 4 Sec, Dr David A Strickler, 612 Empire Bldg, Denver

District of Columbia Washington, April 11 Sec., Dr E P Copeland, The Rockingham

Idaho Boise, April 4 Sec, Dr Charles A Dettman, Burke

Minnesota Minneapolis, April 4 7 Sec, Dr Thomas S McDavitt, 814 Lowry Bldg, St Paul

Missouri St Louis, March 20 22 Sec, Dr J A B Adcock, State House, Jefferson City

Montana Helena, April 4 Sec, Dr William C Riddell, Helena

New Mexico Sante Fe, April 10 Sec, Dr W E Kaser, East Las Vegas

Oklahoma Oklahoma City, April 11 12 Sec, Dr Ralph V Smith, 502 Daniel Bldg, Tulsa

Porto Rico San Juan, April 4 Sec, Dr Quevedo Baez, 66 Allen St, San Juan

Rhode Island Providence, April 6 Sec, Dr Gardner T Swarts, 315 State House, Providence

Utah Salt Lake City April 3 4 Sec, Dr G F Harding, 407 Templeton Bldg, Salt Lake City

Missouri June Report

Dr J A B Adcock, secretary of the Missouri State Board of Health, reports the oral and written examination held at St Louis, June 21-23, 1915 The total number of subjects examined in was 14, total number of questions asked, 100, percentage required to pass, 75 The total number of candidates examined was 151, of whom 142 passed and 9 failed Two candidates were granted reregistration licenses One candidate's license was withheld The following colleges were represented

College	Year Grad	Total No Licensed
PASSED		
Yale University	(1907)	1
Bennett Medical College	(1914) (1915)	2
Chicago College of Medicine and Surgery	(1915)	1
Rush Medical College	(1915)	3
University of Illinois	(1914) (1915 4)	5
University of Kansas	(1913)	3
University of Louisville	(1915)	3
Tulane University of Louisiana	(1915)	1
Barnes Medical College	(1909)	1
Ensworth Medical College	(1914)	1
Kansas City Hahnemann Medical College	(1915)	1
Marion Sims College of Medicine	(1895)	1
Missouri Medical College	(1887)	1
National University of Arts and Sciences	(1912) (1915 31)	32
St Louis College of Phys and Surgs	(1914, 2) (1915 5)	7
St Louis University	(1915)	29
Washington University	(1915)	25
University and Bellevue Hospital Medical College	(1900)	1
Jefferson Medical College	(1913)	1
Meharry Medical College	(1915)	8
Memphis Hospital Medical College	(1912)	1
University of West Tennessee	(1914 3) (1915, 4)	7
Vanderbilt University	(1912) (1914) (1915, 2)	4
University of Leeds	(1911)	1
University of Constantinople	(1887)	1
FAILED		
Bennett Medical College	(1910)	1
Maryland Medical College	(1902)	1
St Louis College of Phys and Surgs	(1913) (1915 2)	3
University of West Tennessee	(1914)	2
Milwaukee Medical College	(1910)* (1911)*	2

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* Graduation not verified

Porto Rico October Report

Dr Quevedo Baez, secretary of the Porto Rico Board of Medical Examiners, reports the practical and written examination held at San Juan, Oct 5-9, 1915 The total number of subjects examined in was 9, total number of questions asked, 90, percentage required to pass, 75 The total number of candidates examined was 26, all of whom passed The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Bennett Medical College	(1915)	77 8
Chicago College of Med and Surg	(1915)	75, 76 4, 76 6, 77, 77 6, 78 3, 78 7, 81, 83 3, 67 8
University of Louisville	(1915)	78 1
College of Phys and Surgs, Baltimore	(1915)	77 1, 79 5, 79 9, 81 1, 82 7, 83 2, 83 8, 86 3, 87 8
University of Maryland	(1915)	83 5, 83 6
Jefferson Medical College	(1915)	75 6
Medical College of Virginia	(1915)	75 1
University of Central Spain	(1915)	81 8

Book Notices

The Primary Lung Focus of Tuberculosis in Children By Dr Anton Ghon, O ö Professor of Pathologic Anatomy at the German University in Prague English Edition Authorized Translation by D Barty King, M A, M D, M R C P, Assistant Physician to the Royal Hospital for Diseases of the Chest, London Cloth *Price, 10 shillings* 6 pence Pp 172, with 74 illustrations London J & A Churchill, 1916

When a book consists of a translation by a Briton of a work published by an Austrian, which develops and recognizes as fundamental the Teutonically neglected observations of French investigators, it hardly requires this footnote, which appears at the end of the translator's preface "Needless to say, this work was undertaken, and its publication authorized, before the outbreak of the present war" But, war or peace, the monograph by Ghon is well worthy of translation, for it presents convincingly the results of important investigations on the character of tuberculous infection in children As the trend of opinion among students of phthisis seems to be in favor of the view that infection with tuberculosis nearly always occurs in childhood, and that this early infection determines the future of the individual as regards tuberculosis, we cannot have too much information concerning tuberculosis in the lung Ghon's contribution consists of an analysis of the anatomic findings in 184 cases of tuberculosis in children, examined with particular reference to the pathway of infection His large experience, of which this is only a small part, together with his well-known accuracy of observation, warrants acceptance of his results at their face value In brief, the results are these The common lesion of childhood is in the lymph glands about the hilum of the lung, but in most cases (92 4 per cent) careful dissection shows a pulmonary focus which must be regarded as primary In only 2.7 per cent of the cases was the avenue of infection incontestably outside the lungs Therefore the conclusion is reached that in childhood the primary infection of the lungs represents the usual form of the tuberculous infection Furthermore, in all these children, diagnostic tuberculin reactions had been tried, and the necropsy findings corroborated the results of this test with great regularity This is of special importance in view of the frequency of childhood infection as indicated by tuberculin reactions, and the far-reaching conclusions that have been based on this frequency of positive reactions In only one case of all his series did Ghon fail to find tuberculosis in a child giving a positive reaction The author has presented his work in a brief but sufficiently detailed form and the translation is entirely satisfactory It is an important contribution to the literature of tuberculosis, and should be examined by all interested in this subject

Geschichte der Augenheilkunde Von Dr J Hirschberg, Drittes Buch, Elfter Abschnitt—Italiens Augenärzte 1800 bis 1850 Paper Price, 6 marks Leipzig Wilhelm Engelmann, 1915

This work is a continuation of the history of ophthalmology so ably written by Professor Hirschberg for the second edition of the "Handbuch der gesamten Augenheilkunde" It is not only a biographic collection, as would be implied from the title, it is in reality an abridged history of Italian ophthalmology during the first half of the nineteenth century Beginning with Scarpa, born in 1752, who has been called the father of Italian ophthalmology, the book contains the names and brief biographic sketches of seventy-three ophthalmologists, all of whom have contributed more or less to our present knowledge of ophthalmology It is a little unfortunate that the arrangement is made without regard to chronological sequence For example, Quaglino, who lived until 1894, comes near the beginning, while Quadri, whose name shares equal honors with Scarpa for brilliant achievements in the early years of the century, is not mentioned until well toward the end of the list The various institutions in which ophthalmology is taught, with the date of founding, and the names and years of service of the professors, are also recorded The first ophthalmologic journal was published in 1835 by Fario, it survived only one year No further attempt was made in this direction until 1858 At present there are six journals in existence the oldest of which, the *Annali di Ottalmologia*, was founded in 1871, by Quaglino It is now published under the direction of Guaita of Florence and Rampoldi of Pavia and reflects the high standard which is universally accorded to Italian ophthalmology of the present day

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Medicolegal

Trials and Rights of Members of Medical Societies

(Reid vs Medical Society of Oneida County et al (N Y) 156 N Y Supp 780)

The Supreme Court of New York Special Term, Oneida County, holds that the plaintiff must have judgment restoring him to membership in the county society, on account of alleged irregularities in his trial on charges of unprofessional conduct in permitting certain advertising articles to appear The court says that it assumes that the offense with which the plaintiff was charged was sufficient to justify his expulsion, if proved, that the court had nothing to do with the actual truth or falsity of the charges, but was simply to determine whether, in accordance with the constitution and by-laws of the county society, subordinate to the laws of the state, he had a fair trial that he had notice, that he had a reasonable chance to defend himself from the charges, that proof was presented (not necessarily in accordance with legal form) to establish his guilt that such proceedings were had before the board censors and finally before the full meeting of the county society, as not to shock the sense of fairness The plaintiff, having become a member of the county society, and subscribed to its constitution and by-laws, became bound thereby The court is not unmindful of the fact that it had no right to consider the weight of the evidence presented or to substitute its judgment for the judgment of the plaintiff's fellow members, but it had the right to determine whether there was any evidence against him, and if the determination of his guilt on the charges preferred against him was totally unsustained by any evidence, such determination was contrary to natural justice, and subject to review and correction The burden rested on the accusers to show that, at least by colorable evidence he procured the publication of the objectionable articles He denied the charge, and offered in evidence letters from publishers, or persons connected with several newspapers, to the effect that the charge was not true This evidence was, at least, relevant to the issue It was true that the letters received and offered by him were not admissible on their mere production, and it was true that their contents were hearsay, but, in fairness, if that was the reason for their exclusion, he should have been given time to produce the writers The effect of the expulsion of a member of the medical profession from his county society is to him a very serious matter, and is far-reaching in its consequences to him, and a body having the responsibility of determining the facts in so important a trial should err on the side of enabling the accused physician every opportunity to review the charge made against his professional conduct Moreover, the plaintiff was deprived of having his cause determined by an impartial court or jury by the action of the county society in allowing, through its presiding officer, the intemperate remarks of at least two of its members at the meeting when the plaintiff was expelled That the two members who made the objectionable remarks were disqualified to vote on the question of the plaintiff's expulsion is too apparent for argument It is the purpose of the state and county medical societies to keep their great profession free from incompetent and unprincipled men, and from improper practices which would tend, not only to deceive the public, but endanger health and life But, as these medical gentlemen insist on sanitary conditions when they perform an operation, so the courts insist, on the trial of a person accused of wrongdoing, on such conditions as will insure in the end the fullest measure of justice The plaintiff's right to a fair trial before an impartial court was of infinitely more importance than that the offense with which he was charged should be punished, and in protecting him in this right the court is protecting every member of that honorable profession from possible injustice The Medical Society of the State of New York was improperly made a party to this action, for if he is restored to membership in the county society, he is automatically restored to membership in the state society

Liability for Breach of Contract to Attend Patient Because Could Not Leave Another

(Hood vs Moffett (Miss) 69 So R 664)

The Supreme Court of Mississippi affirms a judgment for $150 damages in favor of Mrs Moffett for an alleged breach of contract on the part of defendant Hood who, after having entered into a contract with the plaintiff's husband, for her benefit, to attend and render to her medical assistance at her approaching accouchement, when summoned on a Friday night said that he could not then leave another patient whom he was attending Mrs Moffett stated that she had given birth to a number of children, knew labor pains from past experience, and had the defendant attended her on the night or morning after he was sent for she would have been delivered of the child within two or three hours, whereas she suffered labor pains at intervals from Friday night until the following Thursday night, when she was delivered The court says that the defendant claimed that a peremptory instruction should have been given in his favor on the ground that it is not incumbent on a physician to leave a patient who is in a precarious condition to attend one that he has previously contracted to attend This proposition, differently expressed, amounts simply to this If a person assumes obligations to different parties, the performance of which may become incompatible with each other, both parties being entitled in equal right, is it an excuse for a default to one party that both obligations could not be performed, and that the person bound chose to perform his obligation to the other? This question has been answered in the negative The defendant's contract in this respect was without qualification and the rule is that "as a man consents to bind himself so shall he be bound" Nor was there error in permitting the jury to award the plaintiff damages for mental anguish for when physical pain is an element of damage, mental anguish accompanying it is also an element thereof, and according to the evidence of Mrs Moffett, she suffered intense and prolonged physical pain because of the defendant s failure to attend her when requested so to do Conceding for the sake of argument that the court below erred in instructing the jury that when the defendant found that he could not attend the plaintiff, it was his duty to have done one of two things, either send another physician or notify the plaintiff that he could not attend her, the error was not such as could be complained of by the defendant, for it was committed in his favor, since neither the sending of another physician, unless consented to by the plaintiff or her husband, nor notifying the plaintiff that he could not attend her, would have constituted a compliance with the defendant's promise Such acts on the part of the defendant could be availed of, if at all in mitigation of damages only If the defendant entered into a contract to attend the plaintiff's accouchement and failed so to do without fault on the part of the plaintiff or her husband he was liable for the injury, if any, thereby inflicted on her The jury should not have been instructed, however, to award punitive damages This was an action for damages alleged to have been sustained because of the breach of a contract, and the rule is, with probably two exceptions, within neither of which did this case come, that such damages are not recoverable in such an action unless the act or omission constituting the breach of the contract amounts also to the commission of a tort or wrongful act. But this error was rendered harmless for the reason that since the amount of damages awarded was only $150, it could not be said that the jury responded to the instruction and included in the verdict an award for punitive damages

Society Proceedings

COMING MEETINGS

American Assn of Genito Urinary Surgs, Washington, D C, May 9 10
American Association of Path and Bact, Washington, D C, May 9 11
American Climatological and Clin Assn, Washington, D C, May 9 11
American Dermatological Association, Washington, D C, May 8 10
American Gastro Enterological Association, Washington, D C, May 8 9
American Gynecological Society, Washington, D C, May 9 11
American Laryngological Association, Washington, D C, May 9 11
Amer Laryn, Rhin and Otol Assn, W Sul Sprgs, W Va, May 5 6
American Medico Psychological Association, New Orleans, April 4 7
American Ophthalmological Society, Washington, D C, May 9 11
American Otological Society, Washington, D C, May 8 9
American Pediatric Society, Washington, D C, May 8 10
American Society of Tropical Medicine, Washington, D C, May 9 11
American Surgical Association, Washington, D C, May 9 11
American Urological Association, St Louis, April 17 19
Arizona Medical Association, Phoenix, April 26-27
Arkansas Medical Society, Texarkana, May 2 4
Association of American Physicians, Washington, D C, May 9 11
California State Medical Society, Fresno, April 18 20
Cong Am Phys and Surgs of No Am, Washington, D C, May 9 10
Florida Medical Association, Arcadia, May 10 12
Georgia Medical Association, Columbus, April 19 21
Iowa State Medical Society, Davenport, May 10 12
Kansas Medical Society, Topeka, May 3 5
Louisiana State Medical Society New Orleans April 18 20
Mississippi State Medical Association, Greenville, May 9 11
Missouri State Medical Association, Excelsior Springs, May 8 10
Missouri Valley Medical Society, St Joseph, Mo, March 23 24
National Assn for Study and Prev of Tuberc, Wash, D C, May 11 12
North Carolina State Medical Society, Durham, April 18
North Dakota State Medical Association, Devils Lake, May 10 11
Oklahoma State Medical Association, Oklahoma City, May 9 11
South Carolina Medical Association, Charleston, April 18 20
Tennessee State Medical Association, Knoxville, April 4 6
Texas State Medical Association, Galveston, May 9 11

HARVARD MEDICAL SOCIETY

Meeting held Jan 22, 1916

The President, Dr Roger H Dennett, in the Chair

What is Meant by Hospital Efficiency, and Some of the Factors Which Are Often Responsible for Lack of Efficiency

Dr. Winfred H Smith, Johns Hopkins Hospital, Baltimore Those who have discussed this subject have measured hospital efficiency in many different ways The per capita cost really tells nothing, except as applied to a particular institution under consideration The patient is the prime consideration The primary purpose of the hospital is to treat and care for the patient, and the end-result should be all that modern skill and knowledge, supplemented by the necessary facilities, can accomplish at the hands of the carefully selected individuals composing the organization The organization is the power that produces the results Hospital efficiency means thoroughness, with sympathetic consideration and uniform kindness It means the courteous reception of the patient, with due consideration to his claims to charity, prompt skilful medical and surgical attention, careful and skilful nursing, a thorough study not only of the symptoms and findings, but also of the bearing which these have on the problems of the disease, all of which means accurate and complete records, a discharge of the patient at the proper time, with a full knowledge as to his ability to carry out instructions and to the suitability of his home surroundings for continued convalescence, and the machinery with which to make proper arrangements when necessary, and throughout the whole course of hospital procedure, a careful attention to business detail, economy of time, effort and materials, at the same time avoiding any tendency to look on the patient as a mere case or number Some of the factors which are commonly responsible for inefficiency are, first, there is a lack of funds Second, in large cities, hospitals are located with too little consideration of the needs of the section selected, with the result that some sections have more hospitals than are needed, while other large sections are absolutely without hospital provision Third, organization, first and last, is one of the most important factors The board of trustees is the governing body and the final authority, and should therefore be chosen with the greatest care The staff organization is no mean factor in hospital efficiency No member of the staff should be eligible to the office of trustee Appointments to the staff should be made only on merit The superintendent should have the authority as well as the responsibility, and should at all times have the support of the trustees and of the staff

The Dividing Line Between Medical Charity and Medical Business

Dr E A Codman, Boston One of our pet humbugs is to confuse charity and business Inefficiency and dishonesty in either charity or business should be equally abhorrent to our profession, and honest business will give efficient charity its full play This is difficult under present hospital conditions Pretense and humbug perhaps even more than commercialism tend to make one think unfavorably of his fellow men Our present system of conducting hospitals is full of pretense and humbug The ideals of the medical profession can be better maintained by conducting business with charity than by pretending that our charity is not business Practically, what can the modern physician do toward the realization of these ideals? Let each hospital and each individual in each hospital put off on the man higher up every case in which he seriously doubts his own ability to effect a cure And vice versa, let each of the "men higher up" refuse to care for the simple curable case which his juniors can treat as well as he Most of the best men do this now, but it should be made the fashion, so that those who did not do it would become unpopular When this is applied to individuals it will begin to be applied to hospitals The small, poorly equipped, poorly financed nonteaching hospital should not be allowed to experiment with unusual and difficult cases The small hospital should be encouraged to send in its bad cases to the great teaching hospitals Let private hospitals be encouraged to treat only those cases which they are qualified to treat and render themselves subject to litigation if they are negligent or unscrupulous We should make for the truth seeking scientific clinician a place comparable to that of the great electrical and engineering experts to whom even big business has to turn Let the "charitable" people pay them such salaries that they in turn can be charitable if they want to, without pretending that their business is charity

The Convalescent Field Its New and Changing Borderlands

Dr Frederic L Brush, Burke Foundations for Convalescents, White Plains, N Y The hospital efficiencies most needing development are not now internal, but in the lines of hospital extension, in work for health outside of the main buildings The present need is not for so many new small precarious associations, but longer, stronger extension arms to hospitals Hospital efficiency thus covers convalescence, which is taken to include health increase, health holding and prevention of health deterioration The larger convalescent institution, accommodating from forty to 300 or more, which might be governmental, private, corporate or a branch of a hospital organization, promises to become quite distinctively an American type of health plant, and only the formative stage has been entered The recent extensions and plans in the convalescent field cover the following 1 Surgical dressing cases Wounds heal better in the convalescent home for various reasons At the Burke Foundation we are doing 700 surgical dressings per month, and we welcome such cases as nephrectomy, empyema, recent fractures, even compound, and wounds with drains Our troubles and failures have not been with postsurgery 2 Heart disease (*a*) Those with fair compensation and reserves should not be refused because labeled "heart disease," when needing convalescence for other reasons, (*b*) Those who just tire "on the job" frequently, with fairly holding compensations, should be given periodic upbuilding, (*c*) Youths should be given first place in cardiac convalescence, and many more beds should be open to them This is to be the main point of an attack on cardiac disease 3 We have almost no convalescent places for men, and the need is probably one-half that of women and is on the average a surer need

4 Rheumatism The situation is somewhat like that of heart disease, and many will be cared for along with heart disease 5 Tuberculosis All forms should be received freely The quiescent may occasionally be received with precautions, for these often need in other ways precisely what the country home can give. 6 Mental convalescents There are possibilities of bringing into the convalescent field early or 'borderline," or observation mental conditions, and some of the nervous diseases 7 Adolescence The world over this vital age, from 12 to 16 "falls between," as to institutional care, and for well-known reasons 8 Colored persons There are practically 100 000 in this country, and not a convalescent bed for them 9 Preventive convalescence. With this preventive health upbuilding there will be needed five beds where one is now needed At a low estimate at least 10 000 persons per year should go out from the New York dispensaries alone There is danger of overdoing convalescent provision in some directions

The Practicability of Ratings in Appointment and Promotion of Members of the Visiting Staff

Dr Robert L. Dickinson, Brooklyn The defining of fitness is no simple matter There is no schedule of such work and no method of charting it Yet the claim is reasonable that nomination should be based on demonstrable performance and characteristics

Medical Cooperation as a Test of Efficiency

Dr. S S Goldwater, New York There are two forms of cooperation for which provision should be made, first the cooperation of the hospital with individual forces outside the institution and second cooperation within the institution When the patient is brought to the hospital it is desirable that there should be some form of cooperation with the family physician Some hospitals take the trouble to notify the physician who sends the patient as to the diagnosis, whether an operation is to be performed and at what time it is to be done. The family physician is likewise notified of the patient's discharge In this way the patient's relationship with the family physician will be continued and when the patient leaves the hospital it should be kept up In addition the family physician should have the freedom of the wards and be invited to make the rounds with the staff In this way postgraduate instruction can be made available in a way that can be afforded by any hospital organization The general practitioner should also have the privilege of the operating room There should be an affiliation between independent dispensaries and hospitals Another form of cooperation, the object of which is perhaps not so obvious, is the making of careful records of rejected cases, and thus one may be able to know what hospitals are unable to do There should be cooperation of the hospitals with the department of health Every case of contagious disease should not be transferred from the hospital to the board of health regardless of the physical condition of the patient In every hospital a special ward should be established for receiving and treating contagious diseases If really conscientious, no hospital authorities would permit the transference of very sick patients The hospitals should also cooperate in caring for the physical defects of school children In from 80 to 85 per cent of the children having defects, the parents are unable to meet the indications and something should be done toward giving these children proper treatment. The ambulance service should be so organized that it is not necessary to call ambulances from distant parts of a city in order to transport a patient. Hospitals might combine in the use of a common power plant, kitchen, laundry, etc. Such a plan has been tried out in St. Louis, and has succeeded so well that it has been adopted in Cleveland There should be cooperation between hospitals and medical schools for the purpose of giving to all medical students the opportunity for hospital training I would suggest that the department of health accept no man for diagnostic work who has not had at least one year of hospital training This would raise the standard of men in the department so that holding such a position would be considered an honor Coming to a consideration of the subject of cooperation within the hospital, there should be cooperation between the outpatient and inpatient departments, the clinical department should be in close touch with the laboratory All available clinical aids should be given the laboratory man In the outpatient organization there should be better laboratory and therapeutic facilities afforded than is often the case A hospital organization should be so complete and its parts so well correlated that every patient coming to the hospital or dispensary should get what he requires

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

American Journal of Diseases of Children, Chicago

March XI No 3 pp 177 244

1 *One Hundred Cases of Infantile Type of Hereditary Syphilis B S Veeder and P C Jeans St Louis.
2 *Lobar Pneumonia in Childhood Roentgen Ray Findings and Explanation of Bronchial Signs H H Mason New York
3 Cases of Recurrent Hilus Infiltration Unusual Form of Tuberculosis in Children H Wessler and M H Bass New York
4 Mesenterium Commune with Abnormal Course of Jejunum A Strauch Chicago
5 Hemorefractometry in Infectious Diseases of Children Mello Leitao Minas Geraes Brazil
6 *Study of Blood in Tuberculous Meningitis E A Morgan, New York.
7 *Rapid Method for Determination of Fat in Feces. C. H Laws, Ann Arbor Mich, and W R Bloor Boston
8 Cases of Sialolithiasis and Sialodochitis in Childhood H Neuhof, New York

1 **Hereditary Syphilis**—A syphilitic rash or a cutaneous lesion of some type was present in 77 of the cases analyzed by Veeder and Jeans and absent in 23 A macular, or slightly maculopapular rash occurred in 14 cases, while in 48 the eruption was confined largely to an exfoliative or desquamative dermatitis involving the soles of the feet and the palms of the hands Rhinitis was present to a greater or less degree in 74 cases and was noted as absent in 26 In 82 cases the spleen was definitely palpable while in 18 it could not be felt on physical examination Epiphysitis was present in 14 cases and absent in 86 In 8 of the 14 cases the epiphysitis developed between the fourth and sixth week Of 77 infants whose weight was recorded in the histories, 7 were overweight, 10 of average weight and 60 below average weight Eighty-one, or 85 per cent of the infants developed symptoms in the first two months of life and about two thirds of these within the first month The development of symptoms was delayed until late in infancy in a few cases The Wassermann reaction was made in 82 cases It was positive in 76 cases or 92 6 per cent , doubtful in 1 case, or 1 3 per cent , negative in 5 cases, or 6 1 per cent In 18 cases no test was made for various reasons—usually because of very small babies with active signs whose mothers gave a plus Wassermann The mortality figure for the series reaches 40 per cent, and this despite the fact that many of these infants have been treated intensively with both neosalvarsan and mercury The deaths are almost entirely confined to the first half year of life

2 **Lobar Pneumonia.**—Thirty-seven cases of lobar pneumonia were studied with the Roentgen rays by Mason, most of them repeatedly All thirty-seven cases showed a definite shadow which was always so placed that it touched the pleura at some point The early shadows were triangular in shape with their bases on the pleura and their apices separated from the region of the root by normal lung In their later development the shadows extended in size and became uniform from the periphery to the root of the lung When the shadow involved this entire stretch, bronchial voice and breathing were present but not otherwise It is believed that the inference is justified that the dimensions of the shadows correspond to the extension of consolidation

6 **Blood in Meningitis**—Two hundred and fifty-two blood counts were made by Morgan on 169 cases of tuberculous

meningitis The average leukocyte count was 20,900 per c mm with an average polynucleosis of 72 6 per cent Only ten, or 4 per cent, of the counts were below 10,000, and twenty, or 8 per cent, were above 30,000 The lowest total count was 5,400, and the highest 70,000—the latter occurring in an uncomplicated case The polymorphonuclear percentage ranged from 26 to 91 The age of the children varied between 2 months and 4½ years It was thought that the variations in the blood picture might be explained by the presence or absence of an added infection, but an attempt to establish this relationship was not successful However, the total leukocyte count and the proportion of polymorphonuclear cells vary with the stage of the disease, namely, both counts increase as the disease advances There is a relative but not absolute diminution in the mononuclear elements of the blood Morgan found a definite relationship between the intensity of the tuberculin skin reaction, on the one hand, and the total leukocyte count and polymorphonuclear percentage on the other Diminution in the former is usually accompanied by an increase in the latter, both being evidences of a failing resistance by the body to the tuberculous infection

7 *Fat in Feces*—By means of the nephelometric principle, which has been used by Bloor for the determination of the fat in blood and milk, Laws and Bloor have found it possible to make an accurate determination of the fat in the stools in about one hour The method consists essentially in extracting directly with acidified alcohol and ether, filtering the extract, then precipitating the fat in a watery solution and comparing the cloudy suspension so obtained with that of a similarly prepared standard solution

American Journal of Public Health, Boston

February, VI, No 2 pp 97 188

9 Public Health Publicity Art of Stimulating and Focusing Public Opinion E A Moree, New York
10 Value of Credit Balance in Public Health Administration C J Hastings, Toronto, Canada
11 Cancer and Public Health F C Wood, New York
12 Bacterial Examination of Sausages and Its Sanitary Significance W E Cary, Chicago
13 Workshop Education in Hygiene R C Routsong, Dayton, Ohio
14 Investigation Into Relationship of Flies and Diarrheal Disease in Children Under One Year of Age in New York City P S Platt, New York
15 Rural Sanitation H A Streeter, Marblehead
16 Proposed Alterations in Procedure for Standard Methods of Water Analysis E Bartow, Urbana, Ill

Annals of Ophthalmology, St Louis

January, XXV, No 1, pp 1 218

17 Trephining vs Iridectomy in Glaucoma H W Woodruff, Joliet, Ill
18 Report on Gold (Mule Shoe) Drain for Chronic Glaucoma, New Method to Avoid Usually Employed Flap A E Prince, Springfield, Ill
19 Surgical Treatment of Retinal Detachment E S Thomson, New York
20 Business and Office Methods in Special Practice L. Emerson, Orange, N J
21 Arrest of Cataract at Early Stage E L Jones, Cumberland, Md
22 Management of Eyelids During Cataract Operation D T Vail, Cincinnati
23 Some Impressions of Expression of Cataract With Sliding Conjunctival Flap H Gifford, Omaha
24 Use of Lead Styles in Treatment of Diseases of Nasal Duct H Moulton, Fort Smith, Ark
25 Ocular Tuberculosis of Nasal Origin W H Luedde, St Louis
26 Tuberculosis of Retina, Recurring Hemorrhage and Retinitis Proliferans E Jackson, Denver
27 Traumatic Rupture of Eyeball, Complete Aniridia, Preservation of Lens, With Practically Normal Vision D F Harbridge, Phoenix, Ariz
28 Use of Optochin in External Eye Diseases, Excluding Pneumococci Infections J S Wyler, Cincinnati

Boston Medical and Surgical Journal

February 24, CLXXIV, No 8, pp 259 300

29 How May You Assist Medical Department of United States Army? W O Owen, Washington, D C
30 Classification of Reformatory Prisoners G G Fernald, Concord
31 *Venesection as Therapeutic Measure C H Lawrence, Jr, Boston
32 Brief History of Gastric Intubation F H Garrison, Washington, D C
33 Ringworm of Hands and Feet J E Lane, New Haven, Conn
34 What Goiters Demand Operation? F H Lahey, Boston
35 Physiologic Considerations in Differential Diagnosis of Neurasthenic, Hysterical and Psychotic Symptoms D Gregg, Brookline
36 Case of Chronic Nephritis with Uremia L Baumann and F Stevens, Iowa City, Ia
37 Treatment of Psoriasis with Horse Serum A P Perry, Boston

March 2, No 9, pp 301 336

38 Relation of Dulness to Heart Outlines G C Shattuck, Boston
39 Neurologic Surgery in War Hospital E C Cutler, Boston
40 Present Status of Gallstone Diagnosis by Roentgen Ray F W O'Brien, Boston
41 Bridging Gap in Outpatient Service H F Day, Boston
42 *Congenital Elevation of Scapula F E Peckham, Providence, R I
43 Diagnosis and Treatment of Diabetes M M Brown, North Adams

31 **Venesection as Therapeutic Measure**—Lawrence favors venesection, performed under proper indications In the presence of dilatation of the heart, renal toxemia, hypertension or a combination of these conditions may be expected to act more promptly and more surely than drugs It lowers blood pressure and at the same time produces a more efficient circulation when performed in cases of hypertension, but does not, in therapeutic "doses," lower normal arterial tension Lawrence insists that it should never be performed in the absence of definite indications, but should not be withheld until the hope of success for any measure is gone The amount of blood to be withdrawn is to be decided by the point at which relief is obtained The error is generally on the side of too small an amount Repeated blood letting, when indicated, does not seem to have any ill effects on the composition of the blood

42 **Congenital Elevation of Scapula**—In a case cited by Peckham he excised a wedge-shaped piece from the trapezius muscle to pull down the scapula A vertical incision was made between the posterior border of the scapula and the spinous processes The trapezius was diveded at the base of the spine of the scapula, and a V-shaped wedge of muscle removed A suture was then taken through all of the tissues, sending the needle close to the bone, at the inferior angle and passing it, also close to the bone, through all tissues anywhere in the region of the tenth, eleventh or twelfth spinous process as the fixed point

Florida Medical Association Journal, Jacksonville

February, II, No 8, pp 225 256

44 Sex Question in Public Health I Dyer, New Orleans
45 Pellagra Multiform Consideration J H Randolph, Jacksonville
46 What Can Be Done for Pellagra Situation in Florida H Hanson, Jacksonville
47 Pellagra J G DuPuis, Lemon City
48 Id J Reeve, DeLand
49 Dermatologic Aspect of Pellagra J L Kirby Smith, Jacksonville

Journal of Cutaneous Diseases, New York

February, XXXIV, No 2, pp 55 158

50 *Anaphylactic Phenomenon in Eczema, Etiology and Treatment of Disease C P White, Boston
51 *Erythematous and Urticarial Eruptions Resulting From Sensitization to Certain Foods W L McBride and E H Schorer, Kansas City, Mo
52 Case of Immunity to Scabies D W Montgomery, San Francisco
53 Case of Early Mycosis Fungoides Clinically Indistinguishable From Parapsoriasis of Brocq F Wise and I Rosen, New York

50 **Anaphylaxis in Eczema**—In the series of cases studied by White there were twenty-four cases of moist, oozing, crusting eczema Four patients gave entirely negative tests and in six the controls were positive Fourteen patients reacted positively to fat-free milk, nine to egg albumin, thirteen to salt-free butter, and six to lactose or to oatmeal water There were twenty-four cases of red, infiltrated, dry and scaling eczema Five patients gave entirely negative tests and in nine the controls were positive Sixteen patients reacted positively to fat-free milk, twelve to egg albumin, sixteen to salt-free butter, and seven to lactose or to oatmeal water There were three cases of papular eczema None gave entirely negative tests and in two the controls were positive Two patients reacted positively to fat-free milk, three to egg albumin, two to salt-free butter, and two to lactose or to oatmeal water There were two cases of lichenoid eczema One patient gave entirely negative tests and the other reacted positively to fat-free milk There were

two patients in whom the only symptom was an infiltrated, leathery skin One of these individuals gave entirely negative tests and the other reacted positively to fat-free milk, to egg albumin and to salt-free butter There was one patient who exhibited merely excoriations due to intense pruritus This individual reacted positively to egg albumin and to salt-free butter and one of the controls was also positive

From these facts and from other investigations not detailed White makes the following deductions on the question of food in its relation to chronic eczema at various ages of life Eczematous infants usually present in their stools an excess of fat or of starch An excess of the former element generally means a moist eczema, of the latter, a dry type When eczema is present and neither fat nor starch appears in excessive amounts in the feces, look for susceptibility to egg albumin or to milk, or, in default of all these more common causes, to a diminished thyroid secretion Susceptibility to egg or to milk can be demonstrated by the new method of food inoculations In chronic eczema the great majority of its victims seem to exhibit anaphylactic reactions to one or more types of food substances Approximately 20 per cent of eczematous individuals do not appear sensitized to any of the common food types In practically 30 per cent of these eczematous patients one or more of the controls proved positive. In the few cases in which both stool examination and cutaneous tests were made there was one contradictory finding Fat was excessive in the stool and negative on the skin, while starch was present in the feces and negative cutaneously It is impossible to tell from the type of eczema present what food elements will give positive skin reactions

51 **Sensitization to Foods**—Varieties of fundamental foods, whether they be fats, carbohydrates or proteids produce untoward symptoms Of these the proteids seem to have a selective action for producing urticarial or erythematous manifestations Until one has analyzed the histories of a sufficient number of cases of these toxic erythemata, the authors claim that it is impossible to realize the constancy of symptoms produced by any one food and the variations of manifestations of the different foods Their data are based on observations in patients varying in age from 7 months to 60 years

Each food produces fairly constant skin lesions (*a*) Urticaria occurs more frequently than erythemata, fish, tomatoes and cheese only producing urticaria, while cereals and pork produce erythemata in a considerable proportion of the cases (*b*) Tomatoes and cereals usually produce these lesions within an hour after ingestion (*c*) The eruptions usually persist less than twenty-four hours (*d*) The peculiar reactions on ingestion of eggs, cereals and pork are inherited in a considerable percentage of the cases (*e*) The skin manifestations in more than one half of their cases of sensibility to egg ingestion were accompanied by cough and dyspnea Most, but apparently not all, urticarias and erythemata following ingestion of these proteids are due to phenomena similar to those observed in anaphylaxis The etiologic factors are summarized by McBride and Schorer as follows *A* Sensitization or true anaphylaxis to (1) foods as such (2) foods as changed by parasites, (3) foods as changed during disease. *B* Consumption of partially decomposed or spoiled foods *C* Simple idiosyncrasy To determine the particular food causing the manifestations, feeding and injection tests are of greatest importance Parasites and other causes of disease must be looked for Probably the Abderhalden tests and antitrypsin determinations may prove of value Treatment should be specific After getting rid of parasites and disease, if there still is hypersensibility, then immunization by feeding is usually, but not always, possible.

Journal of Experimental Medicine, Baltimore

March XXIII No 3 pp 265-429

54 Reactions Between Bacteria and Animal Tissues Under Conditions of Artificial Cultivation. Bactericidal Action in Tissue Cultures. H F Smyth, Philadelphia
55 Id Action of Bacterial Vaccines on Tissue Cultures in Vitro H. F Smyth Philadelphia.
56 Id Cultivation of Tubercle Bacilli With Animal Tissues in Vitro H F Smyth, Philadelphia.
57 Aberrant Intestinal Protozoan Parasites in Turkey T Smith, Princeton N J
58 Regenerated Epithelium in Chronic Uranium Nephritis J Oliver, San Francisco
59 *Studies on Treponema Pallidum and Syphilis Spirocheticidal Antibodies Against Treponema Pallidum H Zinsser and J G Hopkins, New York.
60 Id Individual Fluctuations in Virulence and Comparative Virulence of Treponema Pallidum Strains Passed Through Rabbits H Zinsser J G Hopkins and M McBurney, New York
61 Id Difference in Behavior in Immune Serum Between Cultivated Nonvirulent Treponema Pallidum and Virulent Treponemata From Lesions H Zinsser, J G Hopkins and M McBurney, New York
62 *Experimental Study of Parotitis (Mumps) M Wollstein, New York
63 *Etiology Mode of Infection and Specific Therapy of Weil's Disease (Spirochetosis Icterohemorrhagica) R Inada, Y Ido, R Hoki R Kaneko and H Ito, Fukuoka, Japan
64 *Method for Rapid Preparation of Antimeningitis Serum H L Amoss and M Wollstein, New York
65 Influence of Typhoid Bacilli on Antibodies of Normal and Immune Rabbits C G Bull New York

59 **Spirocheticidal Antibodies Against Treponema Pallidum**—Zinsser and Hopkins believe that their experiments have shown that the serum of rabbits and sheep immunized with cultures of *Treponema pallidum* acquires spirocheticidal properties for these culture spirochetes The normal serum of these animals also possesses spirocheticidal action if used in sufficient quantities, and the action of the immune serum represents probably an increase of the antibodies normally present Both normal and immune spirocheticidal properties are destroyed by heating to 56 C The spirocheticidal action of the immune serum can be reactivated by the addition of fresh normal serum of the same species, insufficient in amount to exert a spirocheticidal effect by itself The structure of these spirocheticidal bodies, therefore, is entirely analogous to that of the well known bactericidal antibodies known to exist in antibacterial serum

62 **Experimental Study of Parotitis (Mumps)**—Wollstein's experimental research demonstrated that cats injected into the parotid gland and testicle with a bacterial sterile filtrate of the salivary secretion of children in the active stage of parotitis or mumps can be made to develop a pathologic condition having several points of resemblance to the condition present in mumps in human beings The intraparotid and intratesticular injections of extracts of normal parotid gland and testicles may cause a mild rise of temperature and leukocytosis of brief duration, but swelling and tenderness are absent The intraparotid and intratesticular injections of filtrates of normal saliva may cause a mild rise of temperture of very brief duration, but leukocytosis, swelling and tenderness do not appear The pathologic conditions set up by the filtrate derived from the salivary secretion of cases of acute parotitis are intensified by successive transfers through a small series of cats of the extract and emulsion of the parotid gland and testicle previously inoculated The pathologic changes are also prevented or reduced when the extract or emulsion is previously incubated with a quantity of blood serum obtained from a cat which has survived inoculation Normal serum, on the other hand, has no such inhibiting effect The deduction from these experiments is to the effect that the salivary secretion in parotitis or mumps contains a filterable substance capable of setting up a series of definite pathologic conditions when inoculated into the testicle and parotid glands of cats Whether this active material is a micro-organism and if so whether it is the specific microbic cause of parotitis or mumps remains to be ascertained

63 **Weil's Disease (Spirochetosis Icterohemorrhagica)**—In the course of investigations of that endemic disease of portions of Japan, which agrees clinically with Weil's disease, so called the authors discovered a spirochetal micro-organism which is now believed to be the cause of the disease. They have named it *Spirocheta icterohemorrhagia* The spirocheta lives in the blood outside the cellular elements and in various organs and tissues The infection occurs probably through the alimentary canal It may, however, sometimes enter through the skin, as at times the disease begins with local swelling of the lymph glands Among fifty-five cases admitted to the clinic, only a few indicated cutaneous origin

Direct infection from man to man is rare The mosquito and flea do not play a part in the propagation of the disease The urine contains the spirochetes, beginning at an early stage of the disease, but in such small numbers as to make detection by the dark field microscope difficult However, from the thirteenth to the fifteenth day of illness, at the time that the immune substance appears in the blood, they become numerous and are easily discovered After the twenty-fourth to the twenty-fifth day the spirochetes begin to diminish in number and to assume a degenerative form, while they disappear completely from the urine before the fortieth day of illness Feces from eight patients were inoculated into guinea-pigs on ten different occasions with one positive result Sputum from two patients was injected into the guinea-pigs on three occasions A positive result was obtained once in a case in which the sputum was bloody Two inoculations with vomitus gave no result A substance which has bactericidal and bacteriolytic action over the spirocheta appears in the blood

The immunity endures for a long period of time The disease occurs frequently among coal miners who work in that part of a mine which is inundated with water got rid of by pumping It is, therefore, necessary to remove the water and then to disinfect the ground, when it is found that the disease occurs among the workmen who work at certain definite places in the mines Lime is effective for the disinfection of the ground It is also necessary to avoid infection through the healthy skin and the alimentary canal Thus, when the infected locality is large so that it cannot be disinfected thoroughly, recourse must be had to the method of active immunization The spirochetes are removed from the blood by salvarsan The serum treatment of the experimentally infected animals has, so far, given satisfactory results and affords a good basis for the clinical use of the serum treatment on man The serum treatment is not suitable for cases which suffer relapses, but may be considered hopeful for cases which have already developed an immune body in the course of the disease, with lasting immunity The authors have also *immunized horses for the purpose of* obtaining an immune serum and they have had at least a partial success with horse serum In a case in which it was administered subcutaneously the spirocheta disappeared from the blood within twenty-four hours

64 **Rapid Preparation of Antimeningitis Serum**—Potent antimeningitis serum has been produced safely in the horse by Amoss and Wollstein by the method of three successive intravenous inoculations of living meningococci and parameningococci repeated at stated intervals Sudden and alarming symptoms and sudden death are avoided by employing first a desensitizing injection and then by adjusting the doses according to the febrile reaction and by making the highly diluted injections slowly By inoculating alternately several strains of living meningococci and parameningococci, and the autolyzed products of each, a polyvalent serum of high titer can be produced in eight to twelve weeks instead of in the ten months required by the subcutaneous method

Journal of Infectious Diseases, Chicago

March, XVIII, No 3, pp 259 354

66 *Examination of Urine and Feces of Suspect Typhoid Carriers Report on Elaterin Catharsis F O Tonney, F C Caldwell and P J Griffin, Chicago
67 *Bactericidal and Protozoacidal Activity of Emetin Hydrochlorid in Vitro J A Kolmer and A J Smith, Philadelphia
68 Bactericidal and *Protozoacidal* Activity of Emetin Hydrochlorid *in Vivo* J A Kolmer and A J Smith, Philadelphia
69 Natural Resistance of Pigeon to Pneumococcus P Kyes, Chicago
70 Sanitary Control of Swimming Pools M Levine, Ames, Iowa
71 Experimental Cholera Carriers O Schobl, New York
72 *Localization of Streptococci in Eye E E Irons, E V L Brown and W H Nadler, Chicago

66 **Urine and Feces in Suspect Typhoid Carriers**—On the basis of the fact that postmortem examinations of typhoid patients commonly demonstrate the presence of typhoid bacilli in largest numbers in the small intestine, whereas they are seldom found in the colon, a plan was evolved by the authors of using, in carrier cases, a suitable cathartic to bring down the contents of the small intestine The selection of such a cathartic involved two essential considerations (1) The hydrogogue cathartic selected, must be sufficiently powerful to empty the bowels thoroughly and to bring down the contents of the small intestines, and (2) it must be devoid of antiseptic properties Elaterin appeared to meet both these requirements satisfactorily The authors' experience with the administration of hexamethylenamin to urinary typhoid carriers indicates that typhoid bacilli are not demonstrable in the urine after recent administration of this drug

67 **Microbicidal Action of Emetin in Vitro**—According to Kolmer and Smith emetin hydrochlorid possesses bactericidal properties, but prolonged contact with bacteria is required before this action becomes apparent A 5 per cent solution of emetin failed to kill *B typhosus* in fifteen minutes, but with a special technic, in which the drug remains in contact with the test micro-organisms, emetin proved about equal to, or even on occasion five times more antiseptic and germicidal than corresponding dilutions of pure phenol The bactericidal activity of emetin is more apparent in fluid than it is in solid culture media In an emulsion of pus and various bacteria from pyorrhea alveolaris a 2 per cent solution of emetin required forty-five minutes to effect sterilization, whereas a corresponding dilution of phenol proved germicidal in five minutes or less, a 0 5 per cent solution of emetin required one and a half hours, and a corresponding dilution of phenol, forty-five minutes, to sterilize the emulsion Emetin is highly amebacidal The logical treatment of pyorrhea alveolaris should consist primarily in its local application combined with hypodermatic administration, especially in severe infections or in those accompanied by systemic complications

72 **Localization of Streptococci in Eye**—The left eye of a patient suffering from a chronic dacryocystitis became acutely inflamed (iridocyclitis), April 11, coincidently with an acute exacerbation of the inflammation of the tear sac Hemolytic streptococci isolated from the tear sac April 28, produced typical iridocyclitis in 3 of 4 rabbits injected intravenously Hemolytic streptococci isolated from the tear sac May 24, produced iridocyclitis in 2 of 4 rabbits injected Cultures of hemolytic streptococci from the tear sac taken on May 26, May 28, June 2, June 7 and June 16, failed to produce iridocyclitis in a total of 22 rabbits, whether injected with other organisms from broth culture inoculated directly from the patient, or in pure culture after isolation on blood agar It is the opinion of the authors that the failure of later cultures to produce iritis was not fortuitous, but more probably due to some change in the invasive power of the organism for ocular tissue seems evident from the fact that whereas in the first 2 series, 5 of 8 rabbits injected developed iridocycyitis, in the later five series of cultures 22 rabbits showed no such lesions Furthermore, in the later experiments 24 other rabbits received the same streptococcus either in pure culture or with other organisms, without the production of typical iridocyclitis, such as was observed in the first 5 rabbits The ability of the cultures to produce lesions of the eye was lost also in transfer from rabbit to rabbit, although iritis was produced in Rabbit 26 by intravenous injection of the hemolytic streptococcus from the eye of Rabbit 10 This loss of power to produce iritis in rabbits was not accompanied by any demonstrable decrease in virulence for rabbits

In cultures the quality of localization in the eye was lost after the third or fourth subculture, usually within very few days after isolation In the case of the first rabbits injected, however, cultures produced iritis seventeen days after isolation from the patient Attempts to obtain a return of invasive power for tissues of the eye in strains of streptococci which had lost it, by growing the organisms in the living eye, were unsuccessful in one series after passage through 5 animals, and in one series after passage through 7 animals These experiments seem to indicate that the invasive power of an organism for special tissue may change within a short period of time during residence in the original host, during animal passage, and in culture, without pronounced or constant changes in cultural characteristics, or in general virulence for animals

Laryngoscope, St Louis

February XXVI No 2, pp 51 152

73 Successful Intranasal Treatment of Affections More or Less Remote From That Organ E Mayer New York
74 Blood Clot Dressing in Closing Wound in Operations for Simple Mastoid Abscess. K. K Wheelock Fort Wayne Ind
75 Ideal Mastoid Operation H O Reik, Baltimore
76 Turbinal Origin of Bleeding Polypus of Nose. T Matsui Fukuoka Japan
77 Bloodless Method of Enucleating Tonsils E T Smith, Hartford Conn
78 Two Cases of Tic Douloureux of Sphenoidal Inflammatory Etiology G Sluder St Louis
79 Secondary Hemorrhage Following Posterior Tip Operation Sodium Citrate Method of Blood Transfusion H Hays and R Lewisohn, New York.

Medical Record, New York

February 26 LXXXIX No 9 pp 353 398

80 Persistent Development Anomalies of Position of Large Intestine With Special Reference to Ascending Colon and Cecum R H Fowler Brooklyn
81 Fair Face of Nature W P Cunningham New York.
82 Neurotic Manifestations in Children A Stern New York
83 How Can Physician s Total Income Be Increased? T I Keilly, New York
84 Bacteriology of Recent Grip Epidemic. C H Nammack, New York.
85 Health Insurance and Prevention of Tuberculosis J B Andrews New York.

Modern Hospital, St. Louis

March VI No 3, pp 153 234

86 Architecture and Costs of Ithaca City Hospital O H Waltz A T Kerr and W A Higgins Ithaca N Y
87 Hospital Laboratory Its Purposes and Methods R M Pearce Philadelphia.
88 Study of Plans for Large Modern Hospital S Lambert New York
89 Treatment of Syphilis in General Hospital J H Stokes Chicago
90 Few Problems of Small Hospital Management B Golightly Birmingham Ala
91 Tent Colony of Massachusetts General Hospital H W Hersey Boston
92 Small Hospital With Minimum of Administrative Space D A Bohlen Indianapolis.
93 Compulsory Health Insurance for Every Individual O S Halsey, New York.

New Mexico Medical Journal, Las Cruces

February XV No 5 pp 167 201

94 Enuresis, Habit or Disease? C. E Lukens Albuquerque
95 Wassermann Efficiency J R Van Atta Albuquerque.
96 Specifics in Medicine. C F Montgomery Roswell
97 Remote Effects of Electric Shock. H A. Ingalls Roswell.
98 Chorea C M Yater Roswell

New York Medical Journal

March 4 CIII No 10 pp 433-480

99 *Gallbladder Diseases C H Mayo Rochester, Minn
100 Gallstone Disease. B T Tilton, New York
101 Cerebrocerebellar Ataxia. A Gordon Philadelphia.
102 Progress of Treatment of Skin Diseases G M MacKee, New York
103 Recovery of Streptococcus Viridans from New York Street Dust W C Thro New York
104 Methods of Examination in Gastro Intestinal Cases. W V Ewers Rochester
105 Bronchiectasis E H Mayne New York.
106 Diet in Heat Insufficiency N B Potter New York.
107 Diet in Arteriosclerosis. L. F Bishop New York
108 Poisonous Proteins (To be continued) V C Vaughan Ann Arbor Mich
109 Susceptibility of Man to Foreign Proteins W T Longcope New York.

99 **Gallbladder Diseases**—Appreciation of the fact that infection is the prime factor in gallbladder disease has revolutionized the surgical treatment of this condition at the Mayo clinic The mortality following cholecystectomy is less at present than that following cholecystostomy (1.2 per cent. against 3 4 per cent) for the last three years, or including all cholecystectomies 1 5 per cent From a series of form letters of inquiry sent to consecutive groups of patients who had been operated on by cholecystostomy during the past several years—none more recent than one year—242 replies were received, which showed that 53 per cent. of these patients were cured, 38 per cent improved, and 9 per cent not improved Of the cured patients 129, 49 per cent. had stones, 11 per cent had stones and empyema, 18 per cent stones and cholecystitis, and 22 per cent cholecystitis From a series of form letters of inquiry sent to patients who had been operated on by cholecystectomy during the past several years—none more recent than one year—219 replies were received, which showed that 71 per cent of the patients were cured, 22 per cent improved, and 7 per cent not improved Of the improved patients, 48 or 57 per cent had stones and cholecystitis, and 43 per cent had cholecystitis alone

Oklahoma State Medical Association Journal, Muskogee

March IX No 3 pp 53 79

110 Neglected Prostate A L Blesh Oklahoma City
111 Facial Paralysis Operative Treatment G A Wall Tulsa
112 Fungus of Brain Following Injury Report of Case. C S Neer, Vinita
113 Fracture of Hyoid Bone Report of Case R L. Hull and J A. Brooke, Oklahoma City
114 Organized Medicine W L Moore Broken Bow

Southwest Journal of Medicine and Surgery, El Reno, Okla

February XXIV No 2 pp 33 68

115 Heat in Treatment of Carcinoma of Cervix C C Nesselrode Kansas City, Kan
116 Diagnosis and Medical Treatment of Gastroduodenitis F B Erwin Wellston
117 Diagnosis of Gastric and Duodenal Ulcers H D Walcott, Dallas Tex
118 Progress in Prostatic Surgery C Capell Kansas City Mo
119 Etiologic Factors of Vomiting During Pregnancy and Measures to Relieve Them J D Seba Bland Mo

West Virginia Medical Journal, Huntington

March X No 9 pp 291 326

120 Cause and Treatment of Grippe With Special Reference to Present Epidemic C P Showalter Clarksburg
121 Importance of Acute Otitis Media. C C Jones Cincinnati.
122 Bronchopneumonia W W Morton, Bluefield
123 Wassermann Reaction and Its Application J E Norman.
124 Appendicitis I Hardy, Morgantown

FOREIGN

Titles marked with an asterisk (*) are abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

February 12 I No 2876 pp 225 260

1 *Trench Fever J W McNee, A Renshaw and E H. Brunt
2 Antenatal Clinics and Prematernity Practice at Edinburgh Royal Maternity Hospital in Years 1909 1915 (To be continued) J W Ballantyne
3 Brilliant Green as Antiseptic. A Leitch
4 *Physics of Surgical Dressing A Primrose.

1 **Trench Fever**—This disease appears to be a definite entity and of infective nature, as is proved by its ready transmission from one person to another by the blood The authors' two clinical types of the disease (*a*) a short fever of about a week's duration, followed frequently after a few days by a short single relapse, (*b*) a longer illness characterized above all by the number sharpness and periodicity of the relapses The symptoms of both types are clinically identical, the most constant and characteristic being headache and pain in the legs and small of the back The two types are, in their opinion, merely varieties of one and the same disease The incubation period varies, possibly with the dose of the infective virus introduced The shortest incubation period in the authors' experimental transmissions was six days, and the longest twenty-two days The disease is transmissible in every case by the whole blood, whether injected intravenously or intramuscularly The disease is not transmissible by the serum In one instance in which the serum proved infective hemolysis of corpuscles had occurred before injection All experiments with filtered serum were negative The plasma was infective in one experiment, but hemolysis of red cells had occurred, so that the plasma was hemoglobin tinted The filtered plasma in another test was not infective These results seemed to point to the virus being contained within the blood corpuscles themselves, whether leukocytes or red cells Blood corpuscles, after washing five times in saline to remove the plasma, were still found to be infective. Very many blood films at all stages of the disease have been examined without a parasite being detected Blood corpus-

cles were broken down, and the hemoglobin tinted fluid passed through a filter in an attempt to prove the virus an ultramicroscopic one confined to the corpuscles The fluid when injected, however, was not found to be infective The only constant morphologic change in the blood is the presence of punctate basophilia This was so marked in some cases as to require very careful investigation to differentiate it from an intracellular parasite The blood counts, differential and ordinary, did not yield any important results As regards the means by which the disease is transmitted in nature no evidence is offered

4 **Physics of Surgical Dressing**—In Primrose's opinion the best dressing for septic wounds is a moist dressing, and he has found the hypochlorous acid solution wonderfully effective The moist dressing is applied directly to the wound, and over this dry gauze Primrose urges that everything be done to favor free evaporation from the surface and absorption into the dressing, which should be frequently changed He is convinced it would be greatly to the advantage of the wounded if impermeable protective and oil silk were entirely removed from the surgical armamentarium of the army Their use in surgery is very restricted, and as they are employed in military surgery at present they do far more harm than good

Dublin Journal of Medical Science

February, III, No 530, pp 71 154

5 Electrocardiograph Notes of Cases. J A Lindsay
6 Effect of War on Medical Profession C M Benson
7 Physically Defective Children and Problem of Their Education W A Winter

Glasgow Medical Journal

February, LXXXV No 2 pp 81 160

8 Delay in Breech Presentations from Extension of Legs R Jardine
9 Neurasthenic Element in Disease J Craig
10 Aural School Clinic J K Love.
11 *Treatment of Tuberculous Sinuses with Menthol C Bennett

11 **Tuberculous Sinuses Treated with Menthol**—Bennett speaks well of the results obtained from the use of menthol in the treatment of tuberculous sinuses A prolonged trial of this substance in a large number of cases has left no doubt in his mind as to its efficacy and reliability, and he now has no hesitation in using it exclusively Injurious action on the surrounding skin and the possibility of undesirable after-effects from absorption of the drug were conspicuous by their absence The granulations of the sinuses remain of a healthy type, discharge is rapidly reduced to a minimum, and the period of healing noticeably shortened An added benefit is the local anesthetic action in preventing postoperative pain The strength Bennett has found most generally serviceable is about 5 grains menthol per dram of methylated spirit Sterilized white gauze ribbon is soaked in the solution, and, when the excess fluid has been pressed out, is immediately used as packing The dressing need not be changed for three days

Journal of Laryngology, Rhinology and Otology, London

February XXXI, No 2, pp 33 72

12 Two Cases of Postoperative Intracranial Infection of Otitic Origin H L Whale
13 Vincent's Infection of Middle Ear and External Canal J Adam
14 Lateral Sinus Thrombosis Followed by Tuberculous Abscess of Gluteal Region Simulating Pyemic Abscess D McKenzie

Lancet, London

February 12, I, No 4824 pp 331 386

15 Effects of High Explosives on Central Nervous System F W Mott
16 Clinical Thermometry Continuous and Quasi Continuous Temperature Records in Man and Animals in Health and Disease G S Woodhead and P C Varrier Jones
17 *Aerial Conveyance of Infection F H Thomson
18 Urea Content of Cerebrospinal Fluid R G Canti
19 Prophylactic Vaccination Against Hay Fever B P Sormani
20 Case of Febris Colombensis G A Lurie
21 Case of Intracranial Hemorrhage Without Symptoms of Compression P W Lam and F Law

17 **Aerial Conveyance of Infection**—Thomson has come to the conclusion that scarlet fever infection is not conveyed by air It has been held for many years that the infection of diphtheria is not air borne, and the evidence in the ward in which Thomson worked only makes it clearer that this opinion is correct Thomson is disposed to regard the evidence as strong against the conveyance of rubella infection by air A considerable number of the cases of rubella introduced into the ward during the winter of 1914 to 1915 came from two scarlet fever wards into which the infection had come from outside the hospital, and in these two wards the infection persisted for many weeks although new patients were not admitted Such persistence of infection in this disease is uncommon, and therefore indicated unusual activity Thomson inclines to the view that mumps is probably not air borne, and he is still in doubt as to whether whooping cough may be occasionally air borne or not He is quite satisfied that chickenpox infection is air borne early in the disease, but it is difficult to determine the exact time it ceases to be so It may uncommonly be conveyed by air on the third day, but apparently not afterward With the intention of working this subject out systematically Thomson introduced cases of scarlet fever and chickenpox into a small boys' scarlet fever ward, but not to guard against contact infection in any way The patients were young, and the ages of the unprotected exposed to the cases of chickenpox were from 1 to 8 years In all, seven patients suffering from both diseases passed through the ward, 1 being introduced on the sixteenth day of the chickenpox, 1 on the twelfth day, 1 on the eleventh day, 1 on the tenth day, 2 on the ninth day and 1 on the eighth day Only one patient was introduced at a time, and was kept in the ward until all the scabs had separated, or longer, while no patient was discharged until more than twenty-two days had elapsed after the first exposure, many being kept much longer No infection arose from any of these cases The ward in which this work was done accommodated twenty patients

Quarterly Journal of Medicine, London

January, IX, No 34, pp 67 163

22 *Three Cases of Multiple Telangiectases with Epistaxis of Familial Type R Hutchison and W J Oliver
23 Some Functional Nervous Affections Produced by War F E. Batten
24 *Acute Hodgkin's Disease, with Involvement of Internal Glands and Relapsing Pyrexia T H Whittington
25 *Case of Pyelonephritis with Glucosuria J H Ryffel
26 *Paratyphoid, Study of Fatal Cases B Dawson and T H Whittington
27 Nephritis in British Troops in Flanders J R Bradford
28 Protective Ferments of Body R L M Wallis

22 **Multiple Telangiectases with Epistaxis**—In this series of three cases two of the patients showed multiple telangiectases of the face with lesions on the buccal mucous membrane, all three gave a story of frequent attacks of epistaxis occurring since their early years, with a definite history of nose bleeding in other members of the family The first patient was a male, aged 49 As long as he could remember he had had attacks of epistaxis, which had been more severe during the last two years, especially in the morning The bleeding persisted even when he was in bed and often occurred after meals Spontaneous bleeding from the lips, sometimes preceded by a feeling of soreness, began about eight years ago, but these had until his admission entirely ceased during the last two years He had bled occasionally from the ears about the fossa of the helix and from the corner of the right eye, also from the gums and from the inside of the mouth, especially after very hot drinks He had noticed some bleeding from the rectum on straining about one year ago From the dilated superficial vessels on the nose occasional bleeding had spontaneously occurred during the last six years, and he was for this reason unable or afraid to wash in warm water He had never observed any hematuria, hemoptysis, or hematemesis of fresh blood, but had frequently vomited swallowed clotted blood The red spots and vessels had been first noticed about eight years ago and were increasing in number He did not bleed particularly readily if he cut himself, and the bleeding from the dilated vessels on the lips and nose was quite easily stopped by the application of cold water The bleeding was, as a

rule rather more frequent during the summer months He had no chilblains during the winter but at this time the numbness and cramp in the toes which he always experienced each morning, and occasionally in the finger tips was more intense The lesions inside the nose were cauterized without checking the epistaxis or causing much general improvement Fifteen grains of calcium lactate was given twice daily for a period of three successive days with a similar result Under a general anesthetic the lesions on the lips and later those inside the nose were treated with diathermy Great improvement followed

The second patient the father of the first patient Since childhood he had had frequent spontaneous attacks of bleeding from the nose, with some bleeding from the gums during the last five or six months Some two or three years ago there had been occasional bleeding from the rectum, with never any hematuria He had had spots on the face for years and he was unable to say when these had first appeared There had never occurred any spontaneous bleeding from these lesions and he was not accustomed to bleed at all markedly from any wounds of the skin The third patient was also a male aged 25 the son of the first patient For as long as he could remember he had been troubled with epistaxis the attacks of which had not been so frequent during the last two years There had been no bleeding from any other areas No melena No hematuria The skin lesions in these three cases and those of the nasal and buccal mucous membranes are nevoid in character and of the nature of angiomata There did not appear to be any underlying pathologic cause for the dilatation of the superficial blood vessels of these regions Although the second case showed a somewhat high blood pressure no definite signs of an associated interstitial nephritis were recognized The low blood pressure in the case of the first patient is attributed to the anemia present and the more aggravated form of his epistaxis and his numerous skin lesions to the presence of a mitral incompetence though this condition appeared to be fully compensated during the period when he was under observation In none of the cases could any history of the indigestion which usually accompanies acne rosacea be obtained, nor was there any sign of any local atrophy in the neighborhood of the skin lesions

24 **Acute Hodgkin's Disease**—The most noticeable features (considering the ultimate diagnosis) in Whittington's case and the ones which led observers astray were as follows The acute onset with symptoms and signs suggestive of peritonitis, the subsequent remarkable resemblance of the case to typhoid, the general resemblance to an acute infective fever, the relapsing course in which there were not only relapses in pyrexia but also a curious periodicity of symptoms and signs, signs suggesting portal obstruction and lastly (and very important) the entire absence of enlarged external glands The diagnosis was not made until after the necropsy The whole aspect of the case seems to support the view that Hodgkin's disease is due to some infective organism which in this case was particularly virulent, and which had its chief habitat in the retroperitoneal glands and spleen

25 **Case of Pyelonephritis with Glucosuria**—With edema of a distribution not usually associated with renal disease, Ryffel's patient had dry skin, marked albuminuria, pus and casts in the urine and lipemia After an interval polyuria and renal glucosuria developed No evidence was obtained of impairment of renal function except as regards the excretion of chlorid and there was some response to diuretics The amount of pus in the urine was such to justify the supposition that organisms were present in the urine These were ultimately found and identified as *Streptococcus pyogenes longus* in pure culture The case was treated as one of infection of the kidneys, vaccines and later urotropin being employed The combination was ultimately successful As the blood pressure was low and the patient had been inactive for a long period progressive muscular exercises were employed in the later stages with beneficial results

26 **Paratyphoid**—Abdominal pain and diarrhea occurred at onset in nine and eight cases, respectively of the seventeen studied by Dawson and Whittington, together with vomiting they were the features of three cases which had a sudden onset Headache occurred in six cough in three and epistaxis in two cases The tongue resembled that found in typhoid In thirteen cases spots were present, in some instances they were of larger size and less regular outline than those of true typhoid In four out of the seventeen cases the respiratory manifestations were so definite as to be a presenting feature of the clinical picture The pulse was soft and in six of the seventeen cases dicrotic Displacement outward of the apex beat was not a marked feature, even when the heart was failing Endocarditis was not once recorded The blood pressure varied The highest recorded systolic pressure in this series was 130 When the condition of the patient was grave 1/100 grain strophanthin intravenously reduced the pulse from 168 to 145 in fourteen minutes and later a second dose reduced it from 145 to 125 In eight cases the spleen was found enlarged postmortem, in six of these the enlargement had been detected during the life, and in two it had not In one case the spleen was half the normal size In two cases there were abscesses of the spleen In one case of paratyphoid A infection the ulceration of Peyer's patches was very marked while in another there were obvious signs of the healing of recent ulcers in the intestine when the patient died from a subsequent typhoid infection In twelve out of the fourteen paratyphoid B infections the small intestine was affected to a varying extent Usually the Peyer's patches were deeply ulcerated, and the solitary lymphoid nodules were raised and varied in size from pinheads to large peas The lower two feet of the ileum were the constant seat of the disease and the neighborhood of the ileocecal valve was the area the most intensely affected The floor of the ulcers was constituted by the muscular coat or the peritoneum and the edges of the ulcers were usually undermined and in all cases thickened In two cases the small gut showed no lesions

Judging from this series of cases the disease falls with more force on the large intestine in paratyphoid than in the typhoid In ten instances of paratyphoid B infection the large intestine from the cecum to the pelvic colon was involved the ulceration being most marked in the cecum and the colon so far as the splenic flexure In the milder examples the lymphoid nodules were raised, hyperemic and umbilicated whereas in the severer forms there were ulcers of varying sizes and depths The appendix was a focus of mischief causing peritonitis in three cases In two of these in which paratyphoid B was the cause, it was acutely inflamed In one there was gangrene of the appendix, at the base of which there was a perforated ulcer In another case the tip of the appendix was intensely inflamed, general peritonitis and portal pyemia had followed, and paratyphoid B was isolated from the pus both in the right iliac fossa and the liver The appendix was the seat of the perforation of a typhoid ulcer in one case of paratyphoid A The causes of death were as follows perforation, 2 cases, peritonitis from infected appendix, 2 cases, hemorrhage, 2 cases, hemorrhage and toxemia 3 cases, toxemia, 4 cases, pneumonia 2 cases, and splenic abscess 1 case These represent a death rate of rather over 4 per cent for paratyphoid B and under 1 per cent for paratyphoid A

Annales de Médecine, Paris

October 1915 II No 5 pp 443 562

29 *Typhoid in the Vaccinated (Les infections typhoides chez les sujets vaccines contre la fievre typhoide.) L. Bernard and J Paraf
30 Concussion of the Spinal Cord by Projectiles (Etude clinique et anatomo pathologique de la commotion medullaire directe par projectiles de guerre) H Claude and J Lhermitte
31 *Reactions of the Organism to the Diphtheria Bacillus Revealed by Fixation of Complement Test P Lévy
32 Clinical Anatomic Study of Compression of the Spinal Cord by a Tumor G Caussade A. Barré and E Joltrain

December No 6 pp 563-626

33 Nodose Erythema Probably of Tuberculous Origin in a Syphilitic (Erytheme noueux et syphilis.) A. Chauffard and A Le Conte
34 Typhoid Fever and Diphtheria Associated Fourteen Cases M Labbé and M Juillan
35 Intermittent Fever from Mild Meningococcemia Consecutive to Cerebrospinal Meningitis Recovery J Baur, J Sévestre and J Hutinel

36 *Complications on the Part of the Ear in Epidemic Cerebrospinal Meningitis Roger and Baldenweck
37 *Acute Fatal Suprarenal Syndrome in Course of Bacillary Dysentery, Four Cases P Remlinger and J Dumas
38 Regeneration of Spinal Nerve Fibers After Crushing Injury of the Spinal Cord (Regeneration de fibres nerveuses spinales dans un cas d'ecrasement de la moelle) G Roussy and J Lhermitte

29 **Typhoid in the Vaccinated**—Bernard and Paraf review their experience with 800 typhoid cases among soldiers Cultures were made from the blood in 325 cases, with negative findings in 189 Typhoid bacilli were found in 32 who had not been vaccinated, and in 15 who had been vaccinated, paratyphoid bacilli in 26 nonvaccinated, and in 222 of the vaccinated This material includes 26 men who had been thoroughly vaccinated against typhoid The disease presented the usual clinical picture in them and in 5 was of a severe type, but none died, 2 developed suppuration in the skin during convalescence and the psychic condition called mental puerilism On the whole, the exceptional mildness of the disease in the vaccinated was noticeable

31 **Fixation of Complement by Serum of Diphtheria Bacilli Carriers**—Levy reports that there may be fixation of complement by the serum of persons from a diphtheria environment, but it occurs more constantly and decidedly in those children who have passed through typical or abortive diphtheria These children had evidently been rendered immune by the presence and activity of a focus of the bacilli, their products causing the production of an ample supply of antibodies The reaction was never positive early in diphtheria

36 **The Ear in Epidemic Meningitis**—Roger and Baldenweck report that they saw only 4 cases of otitis media in 50 men with epidemic meningitis but the internal ear was affected in 9 of the 35 survivors, that is, in 25 per cent In 2 of this group only one ear was affected In 3 the ear symptoms developed early, in 3 others during convalescence The details of each case are tabulated under thirteen headings The auditory nerve itself seems to have been injured in most In 5 cases there was only partial deafness The condition seemed to be stationary in all but 2 cases during the few weeks the men were under observation, in these the deafness improved in one and progressed in the other

37 **Acute Suprarenal Syndrome in Dysentery**—Among 100 men with bacillary dysentery, four suddenly developed cyanosis, abnormally low temperature heart weakness and symptoms suggesting the last stage of cholera The assumption of suprarenalitis was confirmed at necropsy by the swollen condition of the suprarenals and absence of any other appreciable cause for the above symptoms The cases are described with minute detail The syndrome was alike in all resisting all measures including a systematic course of epinephrin

Archives des Maladies du Cœur, etc , Paris

January IX, No 1 pp 1 44

39 *Effect on the Heart Action of Pressure on the Eyeball the Oculocardiac Reflex (Reflexe oculo cardiaque et extrasystoles) G V Ferralis and C Pezzi (Pavia)
40 *Varying Findings with the Oscillometer on Different Arteries (L'etendue comparee des oscillations fournies par l'appareil de Pachon sur les differentes arteres des membres chez le sujet normal) J Heitz
41 *Chronic Coffee Intoxication (Le cafeisme chronique) M Roch (Geneva)

39 **The Eyeball-Heart Reflex**—Dagnini reported June 17, 1908, to the Bologna Medical Society that the main reflex phenomena from stimulation of the cornea and pressure on the eyeball differ materially on a sound and a paralyzed side Pressure on the eyeball seems to stimulate the vagus nerve throughout more effectually, Ferralis and Pezzi declare, than pressure on the vagus in the neck They have been utilizing this oculocardiac reflex to study the relations between this nerve and extrasystoles They examined twenty persons, healthy or with some heart affection, comparing the electrocardiograms before, during and after pressure on the eyeball, and repeating the tests often enough to determine the exact type of the individual response The findings demonstrate, they think, beyond question that this tenth or pneumogastric or vagus nerve is certainly involved, at least indirectly, in inducing or maintaining extrasystoles This seems to open a new vista in therapeutics Even if we are unable to seize the primary causal agent of the pathologic contraction of the heart, atropin to act on the vagus will certainly aid in correcting the condition Its effect naturally will be merely symptomatic, but its use is justified by the phenomena observed in the tests described, independently of its influence in accelerating the rate of the heart. This acceleration alone may cut the extrasystoles In any event, one should be wary in giving other drugs which may be useless or even do direct harm in certain conditions, although so useful when really called for The extrasystoles elicited by pressure on the eyeball may occur isolated or in series Until we can explain this phenomenon with greater precision we are at least justified in treatment based on the premise that the vagus is able to create in the myocardium a particular condition which favors the appearance of premature contractions

40 **Oscillometry**—Heitz has been studying on fifty persons the extent of the excursions of the oscillating needle when placed on different arteries throughout the body in turn The aim was to learn the normal range, for comparing with it the behavior of the arteries in wounded limbs An astonishing variation—sometimes amounting to as much as 50 per cent—in the oscillometer findings was often found in symmetrical arteries in health and between the arteries in the arms and legs

41 **Chronic Coffee Intoxication**—Roch remarks that severe coffee poisoning is rare and mild coffee poisoning does little harm, but there is danger that we may overlook the severe form when we do encounter it We label the case as one of dyspepsia with dizzy spells, nervousness and insomnia, neuralgia with palpitations, or some other vague title. By overlooking the real cause, there is little if any response to the measures we may apply in treatment He cites figures to show that Holland consumes 9 kg of coffee per capita annually and Belgium, 6, the United States, 5, Germany, 3, and France, 2 The aspect in severe chronic coffee poisoning is unmistakable The person is usually thin, prematurely wrinkled, the complexion yellow, with tremor of the hands, lips and tongue The eyes are bright and quick, mydriasis is the rule, the demeanor is hesitating, brusque or uncertain, with involuntary movements and signs of impatience, exaggeration of the tendon reflexes and neuralgias This picture is very seldom complete, but nervous and digestive symptoms are comparatively common, and functional cardiovascular disturbance is still more frequent and important. Roch has found the pulse small, hard and rapid, the arterial pressure high Abuse of alcohol may induce digestive and nervous symptoms like those of chronic coffee poisoning but very rarely the pallor, thinness and neuralgias of the latter The reflexes are reduced, not exaggerated as with coffee poisoning The latter may resemble morphin or cocain addiction but the general condition is not so bad while the nervous and circulatory erethism is more pronounced

The effects of chronic coffee poisoning may suggest gastric cancer, neurasthenia, or Basedow's disease, and it should always be borne in mind as a possibility in puzzling cases, especially among women of the working classes Many keep the coffee pot on the stove all day and drink repeatedly from it In treatment, besides giving up coffee, it is necessary to supply fluids to take its place, and he often orders for this purpose a mixture of 5 gm each of tincture of cinchona, tincture of star anise and tincture of gentian Fifteen drops of this are added to a tumbler of water at room temperature and sipped, repeating this four times a day This wards off thirst and the longing for the customary coffee is less intense Sudden abstention from coffee may bring on tremor, nightmares or severe headache. Tonics may be needed for the general health, bromid or valerian to soothe the nervous system, with other symptomatic measures as required

In poisoning from abuse of tea, the clinical picture is about the same except that cardiovascular disturbances seem to be more common and more pronounced than with coffee Huchard has reported cases of apparent angina pectoris from this cause, the nervous system is affected more Wallace has seen two cases of amblyopia from tea poisoning, and Gordon has reported a case with ataxia, nystagmus, con traction of the field of vision and exaggerated reflexes in a woman who had been taking up to forty-five cups of tea a day Treatment should be the same as for abuse of coffee Roch adds that under the proper measures, the effects of coffee or tea poisoning are thrown off in a few weeks, and they can usually be allowed then in moderation

Bulletin de l'Académie de Médecine, Paris

February 8 LXXV No 6 pp 107 130

42 Minute Intravenous Doses of Colloidal (Basic) Quinin Effectual in Rebellious Malaria F Roux

43 Improved Technic for Localization of Projectiles by Roentgen Rays (Deux procédés simples pour localiser rapidement les projectiles par les rayons X) A Strohl

44 Goiter Cretinism and Myxedema in the Vosges Mountain District L. MacAuliffe

44 **Goiter and Cretinism in the Vosges Mountains**—MacAuliffe has been stationed with the army in the Vosges district for seventeen months and at the request of the municipalities utilized his leisure in medical inspection of the schools He found the thyroid notably enlarged in 288 of the 2,311 children examined and 18 others had large goiters, 3 were cretins and 2 semicretins while 4 presented myxedema Ten others resembled cretins in their face but were intelligent Goiters were found particularly numerous in nine different villages The water supply was from rain and melting snow, with very little mineral content The villages were clean and the people comfortably off Consanguineous marriages were not frequent, meat except pork, is almost unknown

Archives de Médecine des Enfants, Paris

December 1915 XVIII No 12 pp 679 692

45 Universal Desquamative Scarlatiniform Erythema Six Cases (Erythrodermie desquamative generalisee) Loewe

46 Antityphoid Bacteriotherapy for Children Forty Five Cases E Ortiz M Acuna and L. Belloc (Buenos Aires) Commenced in No 11

47 Hereditary Malformation of Face and Skull (Dysostose cranio faciale héréditaire.) J Comby

January XIX No 1 pp 1 56

48 *Serotherapy of Poliomyelitis Thirty Two Cases A Netter

49 Causes and Treatment of Night Terrors in Children T A Williams.

50 *Digestive Disturbances in the Tuberculous Child L Jeanneret

February No 2 pp 57 112

51 *Pneumonia Associated with Scarlet Fever (La pneumo scarlatine) V Hutinel

52 *False Scarlet Fever of Toxic Origin (Pseudo scarlatines d origine toxique) M Lasalle.

53 Primary Splenomegaly in Children (La maladie de Gaucher) J Comby

48 **Serotherapy of Poliomyelitis**—Netter regards his results as promising 6 rapid and complete cures, in 3 cases improvement approximating a complete cure, in 7 marked improvement and in 5 appreciable improvement In 3 no influence from the serotherapy was apparent and 8 of the children died The serum injected was obtained from persons who had recovered from the disease The serum seems to keep its efficiency up to thirty years The injection was made into the spinal canal and repeated daily for a week The doses ranged from 5 to 13 c c.

50 **Digestive Disturbances in Tuberculous Children**—Jeanneret remarks that the dyspepsia from overfeeding and overdrugging is common in private practice but it is rare in hospital patients Primary dyspepsia on the other hand, is common in tuberculous children from the working classes In fact, it is this which attracts attention and is the cause of the child s being brought to the hospital The digestive disturbances may be mild or severe, even to the clinical picture of chronic enteritis They are a great handicap to the child and its debility increases every day These digestive disturbances, however are readily curable Combe investigated the stools of numbers of children and found evidence that over 50 per cent of the tuberculous children had no or very little hydrochloric acid It is easy to supply this lack, and the children began to thrive almost at once as soon as they were given hydrochloric acid Jeanneret now has a record of 120 tuberculous children tested for anachlorhydria, it was found in 25 per cent in his private practice The test is simple and the children do not object to it, swallowing readily the little bismuth capsule on a Congo red stained thread The capsule shows in the Roentgen screen when it gets into the stomach After waiting a moment the thread is pulled out A change in tint shows the presence of hydrochloric acid If the gastric secretion is found defective, he gives a teaspoonful after each meal of a mixture of 3 parts pepsin 5 parts dilute hydrochloric acid, 50 parts syrup of raspberry, and water to 120 parts The secondary enteritis soon subsides when the food is properly digested in the stomach The underlying tuberculosis should be combated by modifying the soil—outdoor life, sunshine, tuberculin, etc, as indicated

51 **Pneumonia Associated with Scarlet Fever**—Hutinel refers in particular to pneumonia preceding the scarlatinal rash by a few days He designates this type as pneumo-scarlatina as both the pneumonia and the scarlatina are modified by the association The pneumonia may appear during the eruption or in the peeling stage, particularly when there is nephritis Each of these has a special type, as he describes in detail from his own and others' experience—a total of fifteen cases The two diseases may have an aggravating influence on each other, the pleura is rendered more susceptible infection is readily installed and is liable to prove very serious There was a relapse of the scarlet fever in a third of the cases with pneumonia The latter probably modified the reactions of the organism and impeded its efforts to immunize An example of this modification of the reactions by an intercurrent disease is the veering to negative of a positive tuberculin skin reaction during an intercurrent measles Typhoid, also is materially modified by an intercurrent pneumococcus infection

52 **False Scarlet Fever of Toxic Origin**—Lasalle was surprised to find that the record of poisoning from copper sulphate, in France, between 1825 and 1905 was 183 cases arsenic taking the lead with 738, phosphorus following with 347, then comes copper sulphate with 183, and verdigris with 76 Copper sulphate is used for spraying grape-vines in France and two children who had been eating grapes thus sprayed developed symptoms deceptively simulating scarlet fever The diagnosis of scarlet fever was made without hesitation but it had to be revised as the children were quite normal again by the fifth day Vomiting, sore throat, headache and a lively rash over the entire body were the main symptoms

Paris Médical

February 5 VI No 6 pp 129 180

54 *Aids for Localization and Extraction of Projectiles E A Weil (Nouveaux instruments de guidage mecanique du chirurgien au cours de l extraction des projectiles) Béclère (Localisation anatomique des projectiles de guerre) F Arcelin (Sur l extraction radio chirurgicale des projectiles à l aide du manudia scope et accessoirement des appareils teléphoniques) L Bouchacourt (Methode radioscopique de localisation des projectiles par lecture directe et appareil de recherche chirurgicale) R Grandgérard (Table des coefficients d agrandissement des images radiographiques utilisable pour la localisation des projectiles dans les tissus) M de Laroquette and G Lemaire (Recherche radiologique des projectiles) P Lehmann (Appareils et dispositifs nouveaux en radiologie) de Keating Hart

55 The Nervous Strain of the War on Noncombatants. (L'angoisse de guerre et son traitement) L Rénon

February 12 No 7 pp 181 196

56 *Diagnosis of Untreated Syphilis With Negative Wassermann for Three Months or More at First (Reactions de Wassermann spontanement tardives) H Gougerot.

57 Autovaccine Therapy in Staphylococcus Septicemia Etienne and Zuber

58 Hernia of the Diaphragm P Legrain J Quenu and G Richard

54 **Localization and Extraction of Projectiles**—This entire number of the *Paris Médical* is devoted to radiology, and is profusely illustrated, showing numbers of devices that will aid in the removal of a metal foreign body

56 **Tardy Wassermann Reaction in the Untreated**—Gougerot has had three patients who presented a dubious lesion suspicious of syphilis, but as the Wassermann was constantly negative on repeated tests the men insisted on giving the lesion the benefit of the doubt and refused treatment After one hundred days, forty-five days and four months, mild secondary lesions developed and the Wasser-

mann became positive This was at the eighth repetition of the test in one case In all three the manifestations of the syphilis were extremely mild, notwithstanding the lack of treatment, and all promptly subsided under mercury or salvarsan In a number of other cases given prompt treatment the Wassermann was persistently negative We must fully realize that the case cannot be dismissed as something other than syphilis when we obtain a persistently negative response to the Wassermann even long past the traditional thirty days from the initial lesion It is better, he continues, to suspend judgment for a whole year, and even then the Wassermann should be repeated the twenty-fourth, thirty-sixth and forty-eighth months These are the decisive tests Until this is done we can never be certain that a suspicious lesion developing under suspicious circumstances may not have been syphilis Clinical examination and the ultramicroscope may clear up the diagnosis before this, but otherwise a patient menaced with syphilis must be kept under prolonged, repeated clinical and serologic surveillance or dire harm to himself and others may result

Revue Médicale de la Suisse Romande, Geneva

January, XXXVI, No 1, pp 5-64

59 *Extra-Uterine Pregnancy Eight Cases P Wanner
60 Omentum Grafts (Des greffes epiploiques) G Patry
61 *Diagnosis of Torsion of the Greater Omentum Veyrassat

59 **Extra-Uterine Pregnancy**—Among the seven cases described in detail was one in which the supposed extra-uterine pregnancy proved at the operation to be an ovarian cyst coexisting with a normal two-months' pregnancy The uterus was not disturbed as the cystic ovary was removed, and the pregnancy continued to normal delivery at term In another case the extra-uterine pregnancy was recognized as the tube ruptured, but under sedatives and repose the relics of the hemorrhage and pregnancy were evidently absorbed as the attending physician had hoped would be the case During the following ten years the previously healthy patient was a semi-invalid, with pains in the back, stomach and abdomen and finally difficulty in urination Wanner then saw the patient for the first time and found when the abdomen was opened that the omentum was solidly adherent to the uterus, and that adhesions fastened the latter to the pelvic wall All pain and disturbances ceased after resection of the omentum and of the adhesions In one of his cases presenting symptoms of ruptured tubal pregnancy, puncture of the pouch of Douglas released a turbid fluid free from blood This misled him to assume a tuberculous process, but uterine hemorrhage compelled intervention later and recovery followed excision of the ruptured tube Another case emphasizes the necessity for extreme caution in palpating the abdomen when there is incipient and intact tubal pregnancy There may be no symptoms except those of a commencing normal pregnancy In the case reported the physician assumed that the uterus was displaced and supposedly straightened it Hemorrhage followed and the pains in the left side continued, with occasional syncopes and finally nausea The correct diagnosis was not made until the pregnancy was of three and a half months' standing, when fetal membranes were passed and the fetus was found in the pouch of Douglas

61 **Torsion of the Omentum**—Veyrassat reports three cases in which he diagnosed torsion of the greater omentum in men between 30 and 55, and successfully operated The most characteristic sign was the localization of the pain along the greater curvature of the stomach, in the region where the omentum is attached above The worst pain was to the left of the umbilicus, where the outer edge of the omentum is attached Two of his patients declared the pain was located along a transverse line at about the level of the umbilicus, the maximum always on the left side The pain was compared to cramps, colics or traction, one of the men saying he felt as if his stomach were being dragged down The first sign of trouble was a sharp pain in the hernia and inguinal region, spreading in the abdomen, with the usual symptoms of subacute peritonitis Palpation revealed a retroparietal mass in the right inguinal fossa, continuous with the hernia, although of varying diameter If the hernia and torsion had been on the left side, the traction and the consequent pain would have been most severe at the extreme right of the transverse line of pain The omentum may become twisted along with torsion of an abdominal tumor, without hernia, or the torsion may occur insidiously, in these cases the correct diagnosis is almost impossible before operating

Berliner klinische Wochenschrift

January 17, LIII, No 3, pp 53-76

62 Treatment of Eczema (Entzündliche Exsudation und Jucken. A Bläschenekzem Beseitigung der Exsudation) P G Unna
63 *Artificial Esophagus (Zur totalen Oesophagoplastik.) G Axhausen
64 Application of Hard, Filtered Roentgen Rays in Treatment of Skin Diseases. (Anwendung harter filtrierter Röntgenstrahlen in der Dermatotherapie) H E Schmidt.
65 The War Literature in the Field of Internal Medicine. (Die Kriegsliteratur aus dem Gebiet der inneren Medizin) P Reckzeh Concluded in No 6

January 24, No 4, pp 77-100

66 Treatment of Eczema (Entzündliche Exsudation und Jucken A Bläschenekzem Beseitigung des Horndruckes.) P G Unna.
67 Welfare Work for Blinded Soldiers (Ueber Kriegsblinde und Kriegsblinden Fürsorge) W Uhthoff, (Der Blinde als Berater des Blinden und in der Blindenfursorge) L. Cohn
68 *Intravenous Injections of Lactose Without Reaction Schlayer's Kidney Test (Ueber reaktionslos verlaufende intravenöse Milchzuckerinjektionen) W Wechselmann
69 High Arching Palate and Adenoids (Gaumenhochstand und adenoide Vegetationen) W Lublinski

January 31, No 5, pp 101-128

70 Surgical Treatment of Wounds of Trunk Blood Vessels, 247 Cases (Meine Erfahrungen in der Kriegschirurgie der grossen Blutgefässtämme) H Kuttner To be concluded in No 6
71 Advantages of Whole Grain Bread (Zur Frage nach dem Nahrwert des Vollkornbrotes) F Röhmann
72 *Rachitis E Schloss
73 Stone in the Pancreas Two Cases (Zur Klinik der Pankreassteinkolik) M Einhorn (New York)
74 *Blunders in Treatment of the Eyes (Ophthalmologische Fehlgriffe im Felde) R Rauch
75 **Iodoform in Gum Acacia Solution for Local Treatment of Hemorrhagic Stools* (Ein Mittel zur Bekämpfung der blutigen Stühle.) Moszkowski

63 **New Esophagus Made from Loop of Duodenum.**—Axhausen gives an illustrated description of the various procedures he applied in the case of a young man with occlusion of the lower esophagus from a caustic swallowed by mistake. The technic was that of Roux and Lexer, a loop of duodenum and a tube made from skin supplying the material for the new esophagus It seems to be functioning well, fluids and food pass directly and promptly into the stomach under the influence of gravity and the swallowing mechanism of the pharynx This gratifying result was realized in six months with five separate surgical procedures in turn

68 **Intravenous Injection of Lactose as Test of Kidney Functioning**—Wechselmann has applied this test in the last two and a half years in many thousands of cases, and since he has been using an absolutely pure article he has had no mishaps or by-effects with it His experience has confirmed its value as an index of the functioning of the glomerular apparatus The elimination of salvarsan depends to such an extent on the integrity of this apparatus that tests of its functional capacity are of fundamental importance before giving salvarsan The value of the lactose test has been universally recognized, he remarks, adding that recent research by Schwarz and Pulay on it has opened new prospects for it The by-effects which have deterred a number from continuing to use it have been traced to contamination of the lactose with molds

72 **Rachitis**—Schloss has made a special study of the skulls of infants at an orphan asylum at Berlin, in addition to the infants of his private practice From the findings in this large material, compared with those reported by others, it seems evident that the skeleton of from 20 to 80 per cent. of the infants examined was incomplete at the time of birth This hypoplastic condition of the skeleton is especially noticeable in the delay or retrogression of the ossification of the skull It is chemically evident further by a local or diffuse lack of adequate bone-forming salts The ultimate cause of this unfinished condition of the skeleton is still a problem It is not rachitis, but it provides an exceptionally good soil for rachitis, and may even be regarded as affording a pre-

disposition for it But rachitis may develop when there is little or none of this predisposition

74 **Blunders in Treating Eye Affections**—Rauch comments on the ill advised measures he has seen applied to soldiers by medical men not trained in ophthalmology, and warns against them He specifies in particular the harm liable to follow the mistaken practice of bandaging the eye when there is much discharge or pus It should be allowed free escape and Nature has provided a sufficient protecting mechanism so that even a protecting cover is not required for such affections as follicular or eczematous conjunctivitis a suppurating lacrimal sac trachoma, or blepharospasm On the other hand, a protecting dressing is indispensable when there is a foreign body in the cornea or it has just been removed, or there is gonorrheal trouble in one eye and it is important to protect the sound eye against its secretions When it is necessary to bandage one eye he bandages both as a rule. He warns further that cocain irritates the sympathetic and may mask the presence of a foreign body When therapeutic mydriasis is required he prefers atropin or scopolamin to cocain Exenteration is simpler in an emergency than enucleation, and he has done it in sixteen cases with satisfactory outcome in all A narrow strip of gauze was introduced into the sclerotic cavity after curetting and enucleation and a compress was applied to ward off inflammatory protrusion of the stump renewed two days later The field surgeon can feel that he has done his full duty by those with wounds involving the eyes if he sees to their being rushed back from the front at the earliest possible moment Get them started on the way for specialist treatment before it is too late

75 **Emulsion of Iodoform in Treatment of Bloody Stools**—Moszkowski has been applying with great success a method of treatment which has long done valuable service in amebic dysentery in the Dutch East Indies in the hands of de Haan and K de Jonge An emulsion of 80 gm iodoform with 100 gm gum acacia in 180 c c. distilled water is given by rectal injection A soft tube is introduced into the intestine for 50 cm Then 45 or 55 c.c of the emulsion are forced into the tube with a syringe His thirteen patients bore the injection well and retained the fluid for two or three hours One of these enemas answered in one case, in 3 two were required in 2, three, in 3, four, in 3, five and in one very severe case nine of the injections were given They not only arrested the tendency to hemorrhage but cured the diarrhea, and the tenesmus subsided almost invariably after a single injection No dysentery bacilli were found in his cases but paratyphoid bacilli in one The spleen was enlarged in three Benefit was apparent in every instance, so that Moszkowski advocates giving these injections daily in all cases of bloody diarrhea regardless of whether dysentery, typhoid or other causes are responsible for the disturbances

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 29 XLVI No 5 pp 129 160

76 Connection Between Ovulation and Menstruation (Neuere Anschauungen uber das Wesen und den Zusammenhang von Menstruation und Ovulation) P Hussy
77 Pathologic Anatomic Diagnosis of Endometritis S Schönberg

February 5 No 6 pp 161 192

78 *Organic Basis for Epilepsy and Two Successful Operative Cases of Brain Tumor (Zwei Falle glucklich operierter grosser Hirn tumoren nebst Beitragen zur Beurteilung organisch bedingter Epilepsie.) T Kocher Concluded in No 7
79 *Metastatic Prostatitis H Wildbolz.
80 Pellagra in Switzerland B Galli Valerio

78 **Brain Tumor and Epilepsy**—Kocher declares that it cannot be reiterated too often that we should not wait for an exact local diagnosis when there is suspicion of an intracranial tumor A decompressive operation in time may not only ward off blindness but may also relieve the subjective disturbances and prevent the peril from sudden increase in pressure on the centers of the medulla oblongata In one of the two cases described in detail, attacks of jacksonian epilepsy gradually developed and by the end of the fourth year became transformed into "genuine" epilepsy, two years later headache and dizziness were superposed on the tendency to epilepsy but there was no sign of choked disk. This was the more remarkable as the subcortical central tumor in the left cerebrum had grown to the size of a hen's egg when removed at the tenth year This absence of choked disk confirms Frazier's assertion that the increased tension of the cerebrospinal fluid is alone responsible for the pressure on the brain entailing choked disk Kocher reiterates that there is no essential difference between "genuine" and jacksonian epilepsy, increased intracranial pressure is a factor in both and he preaches that operative treatment is required for each The pressure may be localized at some one point, and the operation will relieve this even if the actual focus is not discovered

79 **Metastatic Prostatitis**—Wildbolz remarks that because gonorrhea is responsible for prostatitis in the majority of cases, we must not assume that this is always the case Germs of all kinds may reach the prostate through the blood or lymph from some remote focus The urine is apparently normal in this case, and the symptoms from the prostatitis may be misinterpreted He believes that this occurs surprisingly often The prostate offers peculiarly favorable conditions for colonization of germs Weigert found metastatic suppuration in the prostate in 7 of 17 cases of pyemia, and it is usually involved in miliary tuberculosis In the last ten years Wildbolz has encountered 14 cases in which acute prostatitis had developed consecutive to epidemic influenza In the majority of 22 other cases, tonsillitis or bowel trouble had preceded the prostatitis The inflammation did not progress to actual suppuration except in 5 cases Influenza bacilli were not found in the secretion from the prostate in any instance—merely ordinary pus germs—but these bacilli seldom get into the blood in large numbers One of his patients had several styes precede the prostatitis, the connection with the latter was sustained by staphylococcus osteomyelitis developing during the course of the prostatitis Another patient had a furuncle on the neck and a consecutive prostatitis and perinephritic abscess, with staphylococci in all

The symptoms of metastatic prostatitis are pressure and pain in the perineum and rectum with frequent and repeated desire to urinate and scanty output of urine as a rule, but one patient had a metastatic abscess in the prostate which had to be opened through the perineum, and yet there had been no symptoms on the part of the urinary apparatus at any time In some cases sudden retention of urine is the first symptom from the prostatitis The latter is frequently accompanied by terminal hematuria, less often with the suppurating than with the nonsuppurating form There is always considerable general disturbance with this metastatic prostatitis, with or without fever Pressure on the prostate may be extremely painful, even introducing the finger into the rectum causes pain The prostate is generally enlarged, soft and elastic, and the seminal vesicles may be enlarged from obstruction to their outlet by the enlarged prostate In one of his cases epididymitis followed the metastatic prostatitis The normal condition of the urine with the above symptoms reveals the metastatic nature of the trouble The onset of symptoms is stormier than with simple hypertrophy or a tumor The symptoms may be misinterpreted as indicating a tuberculous process somewhere in the urinary apparatus or gonorrhea The prostate may become extremely congested, without inflammation, and cause some of the above symptoms Anything entailing congestion in the region is liable to induce this, especially chronic constipation, a sedentary occupation, sexual excesses and, above all, coitus interruptus With simple congestion the symptoms come on more gradually, the urine persists normal, and the disturbances may keep up indefinitely, while treatment on the mistaken diagnosis of general nervousness, etc., gives no relief Treatment of metastatic prostatitis should be on the same lines as for prostatitis from any cause The prognosis seems to be on the whole favorable

Deutsche medizinische Wochenschrift, Berlin

January 27 XLII No 4 pp 93 120

81 Treatment of Spasms in Children I. (Behandlung der Krampre im Kindesalter) L Tobler
82 *Experimental Bases for Treatment of Pulmonary Tuberculosis with Roentgen Exposures. L. Kupferle and A Bacmeister

83 Combined Radiotherapy in Pulmonary Tuberculosis (Die Erfolge der kombinierten Quarzlicht Röntgentiefentherapie bei der menschlichen Lungentuberkulose) A Bacmeister
84 *Disappointing Results With Endobronchial Spray in Treatment of Asthma, Ten Cases Stephan
85 Bullet in Larynx Wall M Lubinski
86 Lessons From the War in the Domain of Internal Medicine (Ergebnisse der bisherigen Kriegserfahrungen auf dem Gebiete der inneren *Medizin*) P *Reckzeh* *Commenced in preceding volume*
87 War Experiences With Wounds of Nerves and Nervous Affections (Ergebnisse der bisherigen Kriegserfahrungen auf dem Gebiete des Nervensystems) E Tobias To be concluded in No 5
88 Action of Bullets in Organs Containing Fluid (Zur hydrodynamischen Geschosswirkung) M Reuter

82 **Roentgen Treatment of Pulmonary Tuberculosis**—Küpferle and Bacmeister reported in 1913 a series of experiments on rabbits inoculated with tuberculosis and systematically exposed to the Roentgen rays The outcome was decidedly encouraging in many of the animals, and inadequate dosage explained most of the failures In a later series they used large doses at shorter intervals, and report remarkable success, the tuberculous process was evidently arrested and healed over but the tubercle bacilli themselves were not killed No influence from the mercury vapor lamp or cholin could be detected The dosage found effectual for the rabbits was 20 or 23 X surface energy, given at three or five day intervals The research was done under a subsidy from the Koch foundation, and the results are regarded as so promising that roentgenotherapy with hard, filtered rays is now being used in the clinic, and Bacmeister here reports *twenty cases of stationary pulmonary* tuberculosis, without fever, and with a tendency to latency, in which the treatment was applied, as also in a number of febrile and chronically progressive cases The course has been completed by ten patients in this latter group, and they are all clinically cured In every case benefit was manifest, three of these patients had been in his sanatorium (St Blasien) for fourteen, eight and five months but the tuberculosis had not mitigated its progressive character until the Roentgen treatment was applied Remarkable benefit is apparent in a number of the twenty-three others in this group still under treatment The experimental and clinical data all confirm that the Roentgen rays act only on the relatively rapidly growing tuberculous granulation tissue Extremely virulent and rapidly destructive processes are not influenced by them, nor cheesy processes nor the tubercle bacilli themselves The principles for application and the technic are the same as for superficial tuberculous processes Success depends on proper dosage and intervals, supplemented by outdoor life with graduated exercise and repose In conclusion he reiterates that the Roentgen treatment is particularly promising, in combination with the mercury lamp treatment, for a lung compressed *by* induced pneumothorax and *after thoracic surgery*

84 **Endobronchial Spray for Asthma**—Stephan writes from Killian's clinic to report that the experiences there with a novocain-epinephrin solution sprayed into a bronchus through the bronchoscope have not been as encouraging as those published by others One patient had no further attacks for nine months, but then they returned, six others escaped further attacks for a period of two to twelve weeks One patient did not improve at all The spray was applied from one to ten times at weekly intervals

Medizinische Klinik, Berlin

January 30, XII, No 5, pp 112 138

89 Advantage of Transforming a Closed Into an Open Pneumothorax (Zur Frage der Thorakotomie) F Krause
90 Retention Catheter in Treatment of Wounds Involving the Urethra (Harnröhrenwunden und Verweilkatheter) A Rothschild
91 Successful Removal of Large Brain Tumor J Csiky
92 Clinical Cure Under Induced Pneumothorax in Case of Advanced Left Pulmonary Tuberculosis (Kasuistischer und technischer Beitrag zum "künstlichen" Pneumothorax) C Martin

Munchener medizinische Wochenschrift, Munich

January 25, LXIII, No 4, pp 115 148

93 Lateral Transposition of Abdominal Viscera Found in Apparently Healthy Mother of Healthy Child (Situs viscerum inversus abdominalis mit Eventration des rechtsgelagerten Magens und Stauungsektasie der Speiseröhre) W Fleiner
94 *Indican in the Blood With and Without Kidney Disease. (Ueber Indikanämie und Hyperindikanämie bei Nierenkranken und Nierengesunden) M Rosenberg
95 Official Directions for *Prophylaxis* of Scarlet Fever (Die amtsärztliche Bekämpfung übertragbarer Krankheiten II) M Henkel
96 *Mercury Exanthem Ascribed to Salvarsan and Vice Versa (Verwechslung von Quecksilber und Salvarsan Exanthemen) A Neisser
97 Chilling as Preliminary Aid to Radiotherapy (Kalte und Uviolbehandlung in Verbindung mit Röntgen und Radium) H Axmann
98 Consent Not Required for Operations on Soldiers During the War (Soldat *und Operation im Kriege*) P Kaestner
99 Gas Gangrene (Zur Aetiologie und Pathogenese des Gasbrands. I) H Conradi and R Bieling Concluded in No 5
100 Technic for Localization of Foreign Bodies (Feldmässige Improvisation *röntgenologischer Hilfsgeräte* und deren Verwendung zur *Fremdkörperlokalisation und* Orthoröntgenographie.) R Grashey
101 Wounds of the Skull (Zur Frage der Schadelschüsse) A. Kirchenberger
102 First Treatment of Wounds of the Eyes (Merkblatter fur Feldunterarzte VIII) E *Rotter*
103 Repeated Inhalation of Oxygen Tides Past the Danger Point in Collapse From Loss of Blood (Zur Bekampfung von Kollaps bei Ausgebluteten) C Nowakowski
104 Intracardiac Injection of Heart Tonics (Die intrakardiale Injektion) Ruediger
105 Gas Phlegmons, Recovery in One of the Two Cases After Incisions Down to the Bone Marquardt
106 Static and Mechanical Principles Involved in Making Artificial Limbs (Statische und mechanische Verhaltnisse bei Bein*prothesen*) *Stoll*
107 Splints for the Wounded (Eine Schiene für den Kriegsgebrauch) P Mohring
108 *Improved Method for Keeping Records on Hospital Trains.* (Ueber eine sichere und einfache Art, das Beladen von Lazarettzügen *zu regeln und zu überwachen*) P Stielow

94 **Hyperindicanemia in Relation to the Kidneys**—Rosenberg has been studying to determine the extreme limit of normal indicanemia, and tabulates the figures found in forty healthy persons or patients with apparently sound kidneys, in thirty-two with kidney disease but no uremia and in twenty-nine with urea in the blood up to 1 5 1,000 Jolles' test is too delicate to be dependable, but the Obermeyer-Tschertkoff test begins to give a positive response just about at the limit where the high indican content of the blood corresponds to actual insufficiency on the part of the kidneys

96 **Mercury or Salvarsan Exanthem?**—Neisser distinguishes between the "arsenic exanthem" and the exanthem due to a special idiosyncrasy, mostly of the urticaria type The idiosyncrasy may be local from *some preceding injury* of the skin This idiosyncrasy type is liable to develop anew each time salvarsan is given, but the tendency to the "arsenic exanthem" dies out with time In two patients recently the acquired idiosyncrasy could be demonstrated at will by local application of a drop of the arsenic preparation, while mercury had no effect in this line Some of his patients showing these two types of salvarsan exanthem had never been given mercurial treatment or not for many years In conclusion Neisser reaffirms his loyalty to the combined mercury salvarsan treatment of syphilis, declaring that he has never seen anything to indicate harm from this combined technic while he is convinced that the results are much more certain with it

Wiener klinische Wochenschrift, Vienna

January 27 XXIX, No 4, pp 89 120

109 *Bronchospasm N v Jagic
110 Vaccination Against Dysentery II (Ueber Ruhrschutzimpfung II) K Hever and F Lucksch
111 *Experimental *Chemotherapy* of Cancer (Kritische Studien zur experimentellen Therapie maligner Neoplasmen III) S Frankel and E Fürer
112 Welfare Work and Training for War Invalids (Ueber die Schulung Kriegsinvalider) O Burkard
113 *Typhus (*Ueber* Flecktyphus. II) E Wiener

109 **Bronchospasm**—Von Jagic reviews a number of recently acquired data which have thrown light on spasmodic contracture of the bronchi and the influence on it of epinephrin The latter stimulates the sympathetic while depressing the tonus of the vagus, *one of* the main factors in the effect is the exaggeration *of the* excursions of the diaphragm, and this relieves the bronchospasm After having become convinced of the harmlessness of subcutaneous injections of

epinephrin even for the elderly he has been using epinephrin in dyspnea from other causes and especially with emphysema His experience emphasizes the importance of the diaphragm's ampler excursions under the influence of epinephrin Strasburger has recently called attention to the reduction of mucus production in the bowel under the influence of epinephrin, and this may occur likewise in the bronchi Von Jagic has a number of asthma patients who return to get their epinephrin injection whenever an acute attack of asthma befalls them Half an hour after the injection they return to their work as usual, and have no return of the attacks for a long time. The effect of the subcutaneous injection is prompt When the attacks are mild or keep up a long time he gives epinephrin in suppositories

With secondary emphysema the epinephrin relieves but the heart may have to be kept up with digitalis, the former acting merely on the bronchospasm and diaphragm With primary emphysema he has been impressed with the very small range of the excursions of the diaphragm, and when this was corrected by epinephrin the relief was so great that it demonstrated the importance of this and of bronchospasm in emphysema, whatever its origin An interesting sidelight is thrown on emphysema by the positive aldehyd reaction in the urine when there is much dyspnea with emphysema and its veering to negative after the injection of epinephrin The same effect was realized with it in treatment of spastic bronchitis free from all signs of tuberculosis These patients were young soldiers with bronchitis and dyspnea, increased by physical exertion, but little or no expectoration The tendency to bronchial catarrh and dyspnea had been noted for years and palpitations often followed unusual exertion Nothing pathologic could be detected in the heart, and in all the cases examined the excursions of the diaphragm were remarkably small and were invariably increased by epinephrin A tendency to exaggerated tonus of the bronchial musculature may long persist alone or may lead to a secondary bronchitis

111 **Experimental Chemotherapy of Cancer**—Fränkel and Fürer remark that the tendency to a spontaneous cure is the most disturbing element in estimating the effect of different drugs on experimental cancer All the drugs which have shown any action on experimental cancer have the one feature in common that they injure the vessels of the tumor, rendering them fragile so that they rupture. The tumor cells are not specifically affected, merely the vessel walls Bearing these facts in mind, they have been conducting research with various chemicals as they will describe later Here they present the results of their work with cholin—all practically negative

113 **Typhus**—Wiener concludes these impressions of his experience with typhus by emphasizing the benefit from treatment directed mainly to sustain the heart For this he used early and repeated injections of caffein, giving sometimes five or six a day, icebag to the heart and injection of ergot or epinephrin if there was much hemorrhage During convalescence very warm baths every day displayed a decidedly favorable influence The most characteristic symptom of typhus is the extreme fragility of the vessel walls This may entail thrombotic infiltration in the calves or elsewhere, recurring epistaxis or hemorrhage in the kidneys

Gazzetta degli Ospedali e delle Cliniche, Milan

February 3 XXXVII No 10 pp 145 160

114 Progressive Atrophy of Muscles Four Cases in Two Generations in One Family (Atrofia muscolare progressiva familiare) S Niero

Policlinico, Rome

February 6 XXIII No 6 pp 165 196

115 *Larynx Affections in Camp (Flogosi laringee piu comuni nella vita castrense.) G Ferreri

116 Frost Bite (Il piede da trincea) G Dragotti (Sulla clinica e la cura delle congelazioni) T Cecchetelli.

115 **Laryngeal Affections in Soldiers**—Ferreri remarks that the number of cases of adenoids found among the soldiers is a surprise, and also that in large numbers of the younger men, the tonsils show no tendency to the physiologic retrogression During the severer winter weather, disturbances from this cause were frequent, especially in those not accustomed to mouth breathing He warns that the condition of the nasopharynx and larynx should be investigated more systematically in examining men for military service, existing anomalies corrected, and inflammatory processes cured He commends what he calls local medicated baths of the hypopharynx as more effectual than gargling A swallow of the disinfectant solution is taken into the mouth and the head is bent over backward until it almost touches the spine This bathes the hypopharynx in the fluid, and with a little practice one can breathe at the same time Men liable to throat trouble should be advised to be moderate in the use of alcohol and tobacco, avoid too hot and too cold drinks, refrain from singing or shouting in marching on a dusty road, and use individual spoon and fork and rinse out the mouth often with the "anisated water" supplied to all the soldiers Those already showing lesions should spray or gargle besides Irritating gases and dust, sudden changes of temperature and chilling are liable to induce a diffuse hyperemia in the laryngeal mucosa. This congestion may lead to rupture of some minute vessel under the exertion of coughing, and open the portals to infection or cause hemorrhage Hence it is advisable to dispel the congestion by revulsion to the front of the neck, rest of the parts, some astringent spray, and a few powders of sodium benzoate (0.20 gm) and codein (0 01 gm)

Edema of the larynx that does not yield to an astringent spray may require tracheotomy, intubation is almost impossible and dangerous in this condition Syphilitic and tuberculous lesions in the larynx may be favorably modified by inhalation of the fumes from a mixture of 5 parts each of balsam of Peru, menthol and turpentine, with 30 parts tincture of eucalyptus (a tablespoonful in a cup of hot water) He regards as too low Mackenzie's estimate of a syphilitic origin in 5 per cent. of all cases of chronic laryngeal trouble, saying that among the troops the proportion averages much higher The lesion is exposed to particularly unfavorable conditions in soldiers on active service, while the danger of infecting others by means of common drinking cups, etc, is imminent Under irritating influences the lesion may ulcerate and simulate a tuberculous process, but the latter is rendered improbable by the rapid course and enlarged glands Syphilitic processes locate preferably on the back of the larynx, and are more of a coppery red Mercurial inunctions are seldom practicable for soldiers on active service, and the use of neosalvarsan with calomel is preferable In local treatment he advocates painting the lesion with a 1 per cent mixture of mercuric acid nitrate in glycerin Men with tertiary manifestations should be sent to the hospital

Mitteilungen a. d. med Fakultat der k. Univ., Tokyo

XIV No 3 German Ed pp 417 564 Last indexed Oct 30 1915 p 1593

117 Size of Electrode as Influencing the Excitability of the Nerves. (Einflüsse der Elektrodenbreite auf die Erregbarkeit der Nerven.) T Inouye

118 Acetic Sulphuric Acid Test for Skatol (Neue Skatolreaktion) Z Hatta

119 *Silver Chlorid Centrifuge Test for Chlorids in Urine (Ueber die approximative Chlorbestimmung des Harnes mittels Zentrifuge.) Y Sueyoshi.

120 *Phosphotungstate Test for Albumin in the Urine (Neue approximative Eiweissbestimmungsmethode bei der Albuminurie.) Y Sueyoshi

121 Digestibility of Raw and Cooked Fish (Einige Versuche über die Verdaulichkeit des rohen und gekochten Fischfleisches) Y Takasaki

122 *Research on the Vocal Organs of Castrated Fowls. (Zum Studium des Stimmorgans beim Kapaun) Y Hosoya

123 Narcotic Element Isolated from Japanese Shrub of Tea Family (Ueber einen narkotisch wirkenden Bestandteil der Actinidia polygama Miq —Matatabi) S Shimizu

124 *The Diastatic Action of Human Saliva (Diastatische Wirkung des menschlichen Speichels.) Z Hatta.

125 Varicose Enlargement of Connected Splenic, Renal and Collateral Veins. (Ungewohnlich grosser Varix anastomoticus lieno gastro epiploico renalis bei Morbus Banti (?) Todliche Magenblutung) J Nakamura

119 **Centrifuge Estimation of Chlorids in Urine**—Sueyoshi precipitates the chlorin ion with silver nitrate and nitric acid

The amount of silver chlorid recovered from the sediment is an approximate index to the chlorid content of the urine Other things being equal, the proportion between the total amount of sediment and the chlorid content is a constant figure Comparative tests with this and other methods of estimation showed differences ranging from zero to merely 9 per cent

120 **Test for Albumin in Urine**—Sueyoshi here describes an improved technic for Tsuchiya's phosphotungstic-hydrochloric acid-alcohol reagent for detecting albumin in the urine He tabulates the findings with various tests applied to the urine The difference from the Kjeldahl findings was never over 13 per cent while it was 31 per cent with Tsuchiya's original technic The reagent is a mixture of 20 gm mercuric chlorid, 5 gm potassium bromid, 10 c c hydrochloric acid (30 per cent), water 55 c c and alcohol (95 per cent) to 100 c c The test tube is filled about half full of urine and about seven-eighths as much of the reagent is poured in and thoroughly mixed with it The albumin sediment is measured next day as usual The precipitate in normal urine is only about 0 64 mm deep in a straight test tube 25 cm long with a lumen of 9 mm The specific gravity, the temperature and the chemical reactions have no bearing on this test

122 **The Vocal Organs in Castrated Fowls**—Hosova's article is accompanied by four double plates showing the loss of male characters in castrated cocks, and the anatomic bases for the resultant inability to crow

124 **Study of the Saliva**—Hatta tabulates the findings in the saliva in respect to quantity ferment content and variations in response to different stimuli The salivary diastase content did not seem to be directly influenced by the kind of food, and it showed no characteristic fluctuations in any of the diseases investigated Tannic acid, even in minute amounts inhibited the diastatic power of the saliva, while sodium nucleinate magnified it tenfold when in a concentration of 1 5 per cent Below this no effect was apparent, and above 3 per cent it actually inhibited it Tincture and extract of valerian promoted diastatic action this effect was most pronounced at a concentration of 7 per cent Aqueous extracts may have a more favorable action than the tinctures especially the extracts of strophanthus strychnin and ipecac The enzyme content of saliva secreted during chewing is higher than of saliva spontaneously flowing into the mouth Still higher diastatic power was found in saliva secreted under the influence of citric acid He calls attention to the remarkably constant proportion between the amount of saliva secreted and the ferment content, no differences at any time being found in this proportion in specimens of saliva obtained, in health, from the same person at the same time of day and under the same stimuli The diastatic power kept unmodified for six months in saliva preserved under a layer of toluol, but it was lost in a month in saliva preserved merely by a layer of formaldehyd or phenol Six of the sugars had no influence below a concentration of 1 5 per cent, above this they seemed to depress the diastase content

Russkiy Vrach, Petrograd

Dec 12, 1915, XIV, No 50, pp 1177 1200

126 Purulent Infection of Gunshot Wounds and Its Etiology A D Pavloffsky
127 *Action of Thyroid Treatment on Uric Acid Secretion (K voprosu o vliyanii tiriodina na vidielenie mochevoi kisloti mochi) I B Studzinsky and S T Kaminsky
128 Hippocrates P V Modestoff Commenced in No 47

Dec 19, No 51, pp 1201 1208

129 S P Botkin, 1832 1889 N A Batueff

Dec 26, No 52, pp 1209 1212

130 *Ascoli's Precipitation Reaction in Diagnosis of Anthrax M P Izabolinsky

127 **Excretion of Uric Acid During Thyroid Treatment**—Studzinsky and Kaminsky studied the action of thyroidin on uric acid secretion in seven persons Two were healthy, one had a gastric ulcer, one suffered from hyperthyroidism, and three from hypothyroidism It was found that in hypothyreosis, that is, with insufficient thyroid activity, the amount of uric acid in the urine showed a marked increase, not only during the treatment but also during the several days immediately following the suspension of the treatment The thyroid treatment had no apparent effect on uric acid elimination in the urine in healthy persons, or in those that suffered from slight hyperthyroidism An inconstant increase in the general amount of urine was noted which increase, however, had no apparent connection with the condition of the thyroid gland The blood pressure showed no change from the thyroid treatment, unless possibly a slight tendency toward an increase

130 **Precipitation Test in Diagnosis of Anthrax**—Izabolinsky immunized rabbits by injecting intravenously, subcutaneously, or into the peritoneum extracts of anthrax bacilli prepared according to the method of Markoff An agar culture of anthrax bacilli, after eighteen hours of growth at 37 C was washed out with 50 c.c of normal salt solution This fluid having been heated to 50 C was afterward placed in an apparatus for shaking during twenty-four hours, then filtered through a Berkefeld candle The filtrate was mixed finally with a little phenol Of seven rabbits injected only two gave positive results with the anthrax antigen More favorable were the results from vaccinating rabbits with living cultures of anthrax bacilli The best results, however, were obtained from a serum prepared according to the formaldehyd technic A twenty-four hours culture of anthrax bacilli is rinsed with 50 c c of distilled water To this amount 5 c c of formaldehyd are added When the mixture becomes clear, it is rendered neutral by adding sulphuric acid, and then it is placed on a water bath at 56 C for two hours, or longer, up to four hours, if the starch-iodin paper shows no reaction The formaldehyd extract was injected into rabbits subcutaneously The initial doses were 1 or 2 c c After five weeks of immunization, a serum was obtained that gave a precipitation -ring as soon as it was brought in contact with the anthrax antigen

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

January 15 I, No 3 pp 193 276

131 Research on the Perception of Light by Larvae of Flies (De lichtzin der larven van Calliphora erythrocephala—vleeschvlieg) H Were
132 Infection From Typhoid Bacilli Carriers. J P Bijl
133 *Injury From Radium in Treatment of Deafness (Nadeelig gevolg van radium behandeling bij hardhoorendheid) H Burger

133 **Aggravation from Radium Treatment for Deafness**—Burger's patient was a man of 32 who had had four years an insidious catarrhal affection of the middle ear After treatment, including insufflation, the hearing was increased from 15 to 20 cm for the ticking of a watch on the right side and for the whispering voice, from 10 to 20 cm on the left A later examination after another course of treatment seven years later showed the progress of the deafness the watch could not be heard at all by the left ear and only when held to the right ear, the whispering voice at 75 cm from the right ear and only at 1 cm from the left He returned six months later with the story that he had taken a course of radio therapy, 1 mg of mesothorium having been placed in each ear in turn for one or a few minutes After five of these exposures in the course of about six weeks, he could no longer hear the whispering voice at all and only loud speaking 10 cm from his best ear This aggravation of the condition conflicts with what others have reported from radiotherapy in treatment of deafness, but Burger remarks that with radium and mesothorium treatment we are still groping in the dark.

Ugeskrift for Laeger, Copenhagen

February 5, LXXVIII, No 5, pp 125 162

134 *Sterilization of the Unfit (Racehygiejniske Tvangsforanstaltninger) C Geill
135 Rupture of Kidney From Contusion, Recovery After Tamponing and Draining (Et Tilfælde af subkutan Nyreruptur behandlet operativt) O Keller

134 **Sterilization of the Unfit.**—Geill discusses the present status of this question and urges that greater attention should be paid to the other side of the problem, namely, the facilitating of the raising of families by the fit, strengthening the strong

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INHIBITORY PROPERTIES OF MAGNESIUM SULPHATE AND THEIR THERAPEUTIC APPLICATION IN TETANUS *

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The object of this communication is chiefly a practical one. I wish to state on the basis of our experimental work and a critical study of recent clinical data, in a brief but precise way, how magnesium sulphate should be used in the treatment of tetanus. It is not improbable that there are many who know that this salt is being used for the treatment of tetanus, but it is possible that many are unfamiliar with the pharmacologic action of this salt on which this method of treatment is based. It is conceivable that it is assumed by some that any favorable therapeutic effect Epsom salt may exert on tetanus rests on its well-known action as a purgative. Furthermore, I cannot free myself from the doubt that the physiologic phenomenon of inhibition is generally well understood, and especially that the term "inhibitory property" which has been used in the title of this paper in connection with the action of magnesium salts will be properly interpreted. My practical statements, therefore, will have to be introduced by a discussion of a theoretical character. In this discussion I shall deal briefly, first, with the phenomena of inhibition, as I understand them, and then proceed to discuss the inhibitory actions of the salts of magnesium which we have observed in our experimental studies and which led up to the use of magnesium sulphate in tetanus.

THE PHENOMENA OF INHIBITION IN BIOLOGY

The best known phenomenon of inhibition is the action of the vagus on the heart. The heart is a muscle which continually performs rhythmic contractions. When a nerve which goes to a muscle is stimulated, the muscle gets into a shorter or longer state of tetanus. But the Weber brothers discovered that stimulation of the peripheral end of the vagus nerve stops the heart in diastole; it inhibits its contractions. The phenomenon of inhibition was thus discovered. In the past seventy years a great many physiologic processes were discovered which had to be interpreted as inhibitory phenomena. I shall not attempt to discuss here the great amount of the corresponding data, which, by the way, have not yet been satisfactorily correlated. But I shall dwell on two or three points which it would be well to keep in mind. Many years after the vagus inhibition came to light, nerve fibers were discovered, the stimulation of which causes acceleration of the heart beats; it was further established that when the inhibitory vagus fibers and the accelerator nerve fibers are stimulated simultaneously, the effect of inhibition prevails during stimulation to such a degree that the activity of the accelerators cannot well be recognized. But both sets of nerve fibers differ in some peculiarities, among others, in the fact that stimulation of the accelerator nerves leaves a long after-effect, while the inhibitory nerve fibers of the vagus manifest only a short after-effect. This leads to the result that when both sets of fibers are stimulated simultaneously, a considerable acceleration of the heart beat follows soon after discontinuation of the stimulation. By this phenomenon the presence of accelerators, or, as they are also termed, augmentors, *in a nerve trunk can be recognized.* In other functions the opposite relations prevail, namely, the augmentors predominate *during* stimulation and the *inhibitors possess the longer after-effects.* It is readily conceivable that the effect of stimulation of a single nerve trunk could be interpreted in various ways, which, of course, I should not now attempt to analyze. I wish only to add that the above mentioned antagonism applies not only to the motor sphere, but exists also in the functions of secretion and sensation and, furthermore, is applicable also to functions in which the augmenting and inhibitory processes are not represented by well defined nerves or other morphologic units.

It is very useful to have another consideration well fixed in mind. By our daily habits we are used to the mode of thinking that any action, a motion or a secretion, is brought about by a positive cause, a definite stimulus. The absence of such an action seems to need no explanation; a thing, for instance, does not move simply because there is no cause for its motion. This, however, is not true even in the inorganic physical world; a thing does not move in a certain direction exclusively because it is prevented by an opposing force of exactly similar energy which works in an exactly opposing direction. By an analysis of numerous living phenomena I came to the conclusion that *all living functions are continually controlled by two opposing forces: augmentation or action on the one hand, and inhibition on the other hand.* The state of every function at every moment depends on the relation and the predominance of each of these opposing functions. Taking motion as an instance, the maximum effect of the action factor in a living body is tetanus and the maximum effect of inhibition is complete relaxation. The various degrees of tonus present an intermediary state in which one of the opposing forces is more or less predominating. For several decades this theory, and especially the notion that inhibition is a most extensive factor in all manifestations of life, played a dominating part in all my researches; it was a working factor in my early investigations of the physiologic functions of deglutition and of respiration.

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THE INHIBITORY ACTION OF MAGNESIUM SALTS

About nineteen years ago I studied the effect of intracerebral injections of small quantities of various salts. While the effect of nearly every kind of salt consisted in the causation of a more or less intense and characteristic convulsive attack, I found that after an intracerebral injection of a few drops of a 5 per cent magnesium sulphate solution, the animal turned on one side and remained for hours in a stuporous condition. Under the influence of the conception that inhibition is an important factor in the functions of the living body, the question arose in my mind whether or not a definite relation exists between the magnesium ion in the body and its various states of inhibition or depression. A review of the literature revealed that the action of magnesium salts had been very little and only superficially studied. The same may be said of the researches concerning the phenomena of inhibition; the various degrees of depression in the various functional activities were rarely united under a single general point of view. It was mostly the various forms of excitation (action) which fascinated the attention of the physiologists and were investigated as a problem of irritability. On the basis of the above formulated question, I investigated in the last dozen years in the department of physiology and pharmacology at the Rockefeller Institute, with Dr. John Auer and other associates, various actions of magnesium on the animal body. After a long experience I may say today that the *dominant* action of magnesium salts on the living body, no matter by which way it is administered, consists indeed in *depression* or *inhibition*. I shall, of course, not enter here on details. But I wish to mention here one or two facts very briefly. When, as it was found originally by Dr. Auer and myself, after the administration of a very small amount of ether, insufficient to cause anesthesia, an inefficient amount of magnesium sulphate is injected intramuscularly, a profound anesthesia follows which can be maintained for several hours. Consciousness is the first thing which is completely abolished. The unconsciousness is, as a rule, accompanied by a great muscular relaxation, while all the reflexes may still remain nearly unaffected. With a larger dose of magnesium the reflexes, too, begin to disappear, and with a still further increase of the magnesium dose the motor nerve endings become paralyzed—a curare-like action, which is accompanied, of course, by a simultaneous profound central action. These facts were especially confirmed in a number of operations performed on human beings by Dr. Peck, and in a few cases also by Dr. Elsberg.

Chemically calcium and magnesium are closely related substances. Biologically, however, they are strikingly antagonistic to one another. Auer and I found that an animal which may have been completely paralyzed by a magnesium salt can be restored within a fraction of a minute by an intravenous injection of a calcium salt. I must add, however, that this applies essentially to conditions in which the animal was exposed to the effect of magnesium for a comparatively short time. When the animal is saturated with magnesium for a longer period, the antagonistic action of calcium is less evident and is even not without some danger.

At the last meeting of the international physiologic congress in Groningen (1913) I offered the following hypothesis in explanation of the mentioned phenomena. As is well known, the various neurons are not connected by direct continuity but by mere contact. That place of contact is termed by Sherrington "synaptic membrane." The connection between motor nerve and muscle is also not of a very solid character, and is termed by some also synaptic membrane. My theory assumes that the magnesium solution contained in the lymph bathing the synaptic membrane enters with ease into these spaces, and interrupts the passage of nervous afferent impulses from one neuron to the other, especially of such impulses for which there is a less readily prepared path for transmission than the paths existing for normal active reflexes. Furthermore, the synaptic membranes between two neurons offer less resistance to the entrance of the magnesium solution than the more solid membranes between motor nerves and the muscle. What is said of magnesium applies also to calcium. When it is present in the lymph in a quantity larger than normal, it enters readily into the synaptic membrane and displaces or neutralizes there the obstructing or inhibiting magnesium. When, however, magnesium, by its long presence in the lymph, manages in some way to enter into the inside of the nerve cell, the calcium is incapable of readily dislodging or neutralizing there the magnesium. This theoretical view may have some bearing on the mode of the therapeutic action of magnesium salts in tetanus.

THE TREATMENT OF TETANUS BY MAGNESIUM SULPHATE

The effect of magnesium salts was investigated extensively on animals and in a comparatively considerable degree also on human beings by different modes of administration by intravenous, intraspinal, intramuscular and subcutaneous injections. In all modes of administration the character of the effect is, as stated before, unmistakably depressing in character. In intravenous application the effect is rapid, but is comparatively of short duration, and when so used it must be guarded against possible harmful incidents. The inhibitory effect of an intraspinal injection sets in fairly early and may last even longer than twenty-four hours. Intramuscular injections have a fairly early effect, but only of a comparatively short duration. Subcutaneous injections act slowly, but have a cumulative action.[1]

I shall deal here exclusively with the favorable action of magnesium sulphate on tetanus. The action may appear to some as merely a symptomatic one; it relieves the convulsions. But even if this would be indeed, its only favorable effect, it would be of inestimable value, since the suffering in tetanus and the fatal outcome of this horrible disease is nearly exclusively due to the consequences of the tetanic symptoms. And I may assert that no other remedy is capable of relieving the furious symptoms to such a satisfactory degree as do the injections of magnesium sulphate. But on the basis of the above mentioned theory, we may expect from the use of magnesium sulphate perhaps even more than a symptomatic action. It is possible that the magnesium salts, accumulated in the lymph, enter into the synaptic membrane between two neurons and thus prevent the wandering of the tetanus toxin through higher neurons and into the corresponding nerve cells.

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[1] Local applications also exert unmistakably some favorable effect, for instance, in burns, erysipelas, pains, etc.; but I shall not deal here with this side of the subject.

Soon after our publications on the inhibitory action of magnesium salts, clinical cases of tetanus, in which magnesium sulphate was used, began to appear in the medical literature. This was especially the case after the favorable report published by the famous surgeon, Thedor Kocher of Berne. At the outbreak of the present war, numerous cases of tetanus were treated by magnesium sulphate. I shall not enter here on an analysis of the extensive literature on that subject. I wish only to say that a study of this literature convinced me that in many instances the writers were familiar neither with the pharmacologic principles underlying this treatment, nor with its indications or contraindications, and some of the conclusions which they derived from their observations were hastily drawn and without proper criticism. Some did not know enough to distinguish between those symptoms which are due to the disease and those which were brought about by an improper use of the magnesium salts.

In the following I shall try to lay down some rules for the use of magnesium sulphate in tetanus as I learned them from our extensive experimental investigations and from an unbiased, critical study of the clinical literature of that subject. However, in employing magnesium sulphate for the treatment of tetanus and in drawing conclusions from such observations, there are a few things which one has to keep in mind, to which I wish to call attention before I proceed to describe the methods to be used, their respective advantages and disadvantages, and the procedures which are necessary to meet the latter.

There are advanced and dangerous forms of tetanus which cannot be cured, or even relieved temporarily, by any method of treatment, the failure of magnesium in such cases should in no way militate against the possible usefulness of this method. It should be further borne in mind that the treatment of tetanus by magnesium in no way precludes a simultaneous treatment with antitetanic serum. The suffering of tetanic patients is too great and the outlook is too grave to permit the experimental method of treatment in human beings, that is, to test one remedy at one time. Even if magnesium sulphate would do no more than relieve the most severe symptoms, the convulsions and the tetanus, it would be a duty to use it. If properly used, it is certainly capable of relieving severe symptoms in many cases better than any other remedy. Finally, it is necessary to know the possible dangers which may be brought about by the use of magnesium salts, at the same time it is necessary to know well the incidents of tetanus, in order not to look on them as effects of the magnesium injection, this confusion occurred in many instances.

Magnesium may bring about a temporary reversible paralysis of the respiration. I shall discuss later how to avoid this incident and how to meet it when it occurs. The circulation is not readily affected by the injection of the magnesium salt, and such an incident ought never to occur. Magnesium salts cause a temporary appearance of hyaline casts in the urine (Peck, Gates) which disappear readily and early. On account of this effect, magnesium injections, when given in larger doses, should for the present not be used in cases of outspoken nephritis. Intravenous injections of magnesium salts cause a considerable hyperglycemia with only a mild glucosuria (Kleiner and Meltzer), it is, however, a merely temporary phenomena and is no contraindication to the use of magnesium salts.

METHODS OF ADMINISTRATION OF MAGNESIUM SALTS IN TETANUS

1. *Intraspinal Injection.*—It may be stated that for adults this method of administration gives the best results. Magnesium sulphate (Epsom salt, $MgSO_4 + 7\ H_2O$) should be administered in a 25 per cent. solution, 1 c.c. of the solution to each 20 pounds of body weight. In cases of strong opisthotonus it is advisable that the injection be preceded by a moderate general anesthesia, ether or chloroform, which, however, should be discontinued immediately after the injection is completed. The injection should be made in the lumbar region at the usual place and with the usual precautions. The patient should then be placed flat on the back. The relief may begin to become manifest in a short time after the injection, and leads, as a rule, to a complete relaxation, lasting twenty-four hours and longer. During this period the patient is resting, relieved, partakes of food and may fall into a deep sleep. Sooner or later, however, stiffness and convulsive seizures will return. A second injection ought to be given before the tetanic conditions attain their original intensity. The second dose, however, ought to be smaller, for instance, about 0.8 c.c. per 20 pounds. The repeated injections ought to be adapted to the conditions of the patients which mostly do not demand a complete relaxation. It may be necessary to catheterize the patient, this and the occasional rise of temperature do not present contraindications to this method of treatment. The only serious phenomenon which may complicate this procedure is the setting in of a weakening or a temporary standstill of the respiration, due undoubtedly to a (reversible) paralysis of the respiratory center by the magnesium. As a rule, when the above described procedure is followed out carefully, this serious incident does not occur. It is, however, well to know how to proceed when this complication makes its appearance. A needle should be introduced into the lumbar canal, through which some of the spinal fluid should be permitted to run out, and then the canal should be washed out several times with a Ringer solution. During this procedure the upper part of the body should be kept elevated, to facilitate the escape of the fluid from the spinal canal. Also artificial respiration should be instituted with air or oxygen, for both of which my apparatus of pharyngeal insufflation, which I describe elsewhere, is the simplest and the most suitable one. Both the washing of the canal and the artificial respiration should be instituted at an early stage, that is, as soon as the respiration begins to become slow or shallow, the recovery will follow rapidly. Action should not be delayed until the respiration actually ceases, the preceding prolonged asphyxia may be a hindrance to the prompt recovery. The use of calcium or physostigmin, which I shall mention in describing the other methods of application, are of no avail in the intraspinal method. As stated before, the occurrence of a respiratory com-

plication is not to be feared, when used in adults according to prescribed rules In very young children the initial dose should not be higher than 0 5 c c of a 25 per cent solution per 20 pounds For the present, it is perhaps better to advise not to use it in children as a routine method (Kocher) The intracommunication between the various sections of the intraspinal canal is probably much freer in very young children than in adults

2 *Subcutaneous Injection*—This method is incapable of relieving severe acute attacks of tetanic conditions unless used in immense doses On the other hand, small doses used three or four times a day undoubtedly gradually reduce the increased irritability, and may lead even in severe cases to a final recovery[2] The dose should be for adults about 1 2 c c and for children from 0 6 to 0 8 c c of a 25 per cent solution per kilogram of body weight three to four times a day It should be begun as soon as symptoms of a local tetanus (drawing of the muscles in a wounded extremity, slight difficulty in swallowing, slight trismus, etc) make their appearance, and be continued until all tetanic symptoms disappear The use of a moderate local or general anesthetic facilitates these injections, which should be made under the necessary aseptic or antiseptic precautions It should be borne in mind that such injections are incapable of offering a rapid relief in acute tetanic attacks and their value should not be discredited by their failure to relieve satisfactorily acute dangerous seizures

3 *Intravenous Injections*—Magnesium salts disappear rapidly from the circulation, this method is therefore inappropriate for the purpose of bringing about a complete cure, besides, under prolonged use, it may act unfavorably on the circulation In a previous communication I advised against its use However, after a series of experiments (with Dr Auer) on tetanic dogs and after the clinical communications of Hans Kohn and of Walter Straub, I became convinced that this method, if used properly, may save life in severe, dangerous tetanic attacks of the pharynx, the larynx or the diaphragm It should be used in a 6 per cent solution from 2 to 3 c c per minute (or in a 3 per cent solution from 5 to 6 c c per minute) and should be discontinued immediately as soon as the respiration becomes slow or shallow

As a rule, the respiration improves soon after the infusion of magnesium is discontinued If the improvement is not prompt enough, a *small amount of calcium chlorid* (2 5 per cent) should be slowly injected through the venous cannula, used for the infusion of magnesium, until the respiration shows a definite improvement, which may occur in less than thirty seconds The calcium injection should then be immediately discontinued, otherwise all the previous tetanic manifestations may make their reappearance

The striking favorable effects of intravenous injections of magnesium may disappear in from thirty to forty minutes, but the actual dangerous symptoms may be obviated for a much longer period

4 *Intramuscular Injection Plus Ether Inhalation*—In experiments of Auer and myself, it was established that an injection of only 2 4 c c of a 25 per cent solution of magnesium sulphate, given intramuscularly, combined with a temporary mild ether inhalation, is capable of bringing about a considerable relief in less than half an hour, and may last for several hours This method, however, is not appropriate for frequent repetitions

Should it be found, by unforeseen circumstances, that during the use of subcutaneous or intramuscular injections the respiration becomes affected, an intramuscular injection of a 2 5 per cent solution of calcium chlorid may slowly neutralize the unfavorable respiratory effect, without bringing back serious tetanic symptoms I may add here that an injection of about 1 mg of physostigmin is also often capable of improving the respiration

SUMMARY

The best general plan for treatment of tetanus would seem to be as follows

In each and every case of tetanus, 1 2 c c of a 25 per cent solution of magnesium sulphate should be given by subcutaneous injection three or four times a day throughout the entire disease

When the disease is complicated by severe tetanic attacks, 1 c c of a 25 per cent solution for every 10 kg (20 pounds) body weight (in adults) should be given by the intraspinal method

When the disease is attended by immediately dangerous tetanic complications, from 2 to 3 c c per minute of a 6 per cent solution of magnesium salts should be given then by an intravenous injection until dangerous symptoms subside or the respiration becomes shallow or too slow

When the respiration seems to become impaired in consequence of the administration of magnesium salt by the intravenous, intramuscular or subcutaneous methods, calcium chlorid should be injected in the manner described above

It is advisable to have at hand an apparatus of intrapharyngeal insufflation ready for use, whenever the respiration becomes slow or shallow

Finally, the simultaneous treatment by antitetanic serum should not be neglected

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[2] The following case of von Rosznowsky (Therap d Gegenw, 1914, p 435) is very instructive Wound from a shot in the neck, August 27 On the 31st the first appearance of tetanic symptoms Treatment began, September 4, with injections of antitetanic serum On the 6th, much worse On the 7th starting magnesium treatment 10 c c of a 25 per cent solution of magnesium sulphate injected subcutaneously four times daily Early relief and gradual subsidence of all serious symptoms September 14 and 15, only two injections daily Condition worse again From the 16th on, returned again to four injections daily Rapid progressive improvement Stopped injections of magnesium on the 24th Patient cured, got out of bed, October 1 In the course of seventeen days, patient received by subcutaneous injections 530 c c of a 25 per cent solution of magnesium sulphate Of the sixty injections one gave an abscess To sum up early appearance of tetanus, severe symptoms, visible relief and improvement under magnesium treatment, some relapse follows a temporary reduction in the number of injections, improvement after returning to the previous number Complete cure No other treatment and no complications or sequelae

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Making the Cure—Where wisdom fears to venture, unwisdom and cupidity find ample room The wise physician knows that there are ills that drugs cannot cure, that generally only aid or relieve, and that to obtain even this aid efficiently and safely, the existing scientific knowledge is none too great Not so the unwise He who sees in disease only a name, to him a name is sufficient cure Let there be a mixture with a convenient and suggestive name and a pleasant taste, a compendious index of diseases and symptoms—and a lively imagination—and the cure is accomplished Few things could be easier, and few more false. It is not surprising that the "man on the street" should fall into these errors, it is sad that any physician should be misled by the sophistry of interested drug vendors—Editorial in *Clevcland Med Jour*

THE SYSTOLIC BLOOD PRESSURE IN PREGNANCY

OBSERVATIONS ON FIVE THOUSAND CONSECUTIVE CASES IN THE PREGNANCY CLINIC OF THE BOSTON LYING-IN HOSPITAL

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The Boston Lying-In Hospital maintains a pregnancy clinic for the care of patients who are to be confined either in the hospital or in the outpatient department At her first visit, every applicant is given a thorough physical and obstetrical examination, which is repeated as occasion demands Each time that she comes to the clinic the urine is examined for albumin and the systolic blood pressure is determined by the mercury or aneroid sphygmomanometer and palpation of the radial pulse She is instructed in the hygiene of pregnancy, and any necessary medical or other treatment is prescribed Normal patients are directed to return every two weeks, those presenting complications at more frequent intervals Every patient living in Boston or the adjacent cities of Cambridge, Somerville and Chelsea is seen in her home by a nurse between her visits to the clinic, and any abnormality found is reported to the physician in charge and the patient urged to return immediately

This paper is based on blood pressure observations in 5,000 consecutive cases, and covers the period from Feb 28, 1912, to March 11, 1915, 4,472 patients were delivered by the hospital or outpatient services, and their subsequent obstetric histories are definitely known The remaining 576 were confined by private physicians, other institutions, or midwives The average patient first presents herself at the clinic about the seventh calendar month, and makes several visits before confinement There is a growing tendency, however, to apply for treatment earlier in pregnancy, and this is earnestly encouraged The total number of observations, therefore, is considerable and is sufficiently large to point to certain definite conclusions

Maternity hospital statistics have always been misleading, since the large number of emergencies and serious conditions habitually treated in such institutions give a false impression as to the frequency of complications Pregnancy clinic figures, on the other hand, represent the average run of cases, and should give the general physician a much better idea of what he is likely to meet in private practice

I have attempted to ascertain (1) the normal range of blood pressure in pregnancy, (2) the significance of low blood pressure, (3) the significance of high blood pressure, particularly as regards tne toxemias of pregnancy, and (4) certain results obtained in the prevention of eclampsia by the appropriate treatment of these toxemias

1 THE NORMAL RANGE OF BLOOD PRESSURE IN PREGNANCY

The lowest recorded blood pressure in this series was 80, the highest, 225 Newell[1] places the limits of normal blood pressure in pregnancy from 100 to 130, and Haussling[2] from 100 to 135 I found that four fifths of all patients were never below 100 or above 130 The range between these points, therefore, may fairly be considered normal, for the great majority of cases As shown by Table 1, low blood pressure was about four fifths as common as high blood pressure

2 THE SIGNIFICANCE OF LOW BLOOD PRESSURE

In a review of the blood pressure in pregnancy, Lynch[3] says, "Comparatively low blood pressure may be found in obstetric patients with no other evidence of abnormality in health" As has been previously stated, a blood pressure below 100 occurred in 9 per cent of the present series It is, therefore, fairly common But Lynch goes on to state that "through the study of blood pressure we may have a forewarning as to the possibility of a complication fortunately rare at the present time, i e, shock following labor not associated or resulting from hemorrhage" In his series of 100 private cases there were two in which there was a blood pressure below 90 during pregnancy The present series of 5,000 cases showed that in twenty-two times as many pregnancies as reported by Lynch of markedly low blood pressure there was not a single instance of shock unaccompanied by hemorrhage following labor

TABLE 1 —OCCURRENCE OF NORMAL, LOW AND HIGH BLOOD PRESSURES

Blood Pressure	Cases Number	Cases Per Cent
Always between 100 and 130	4,031	80
Below 100 once or more	426	9
Above 130 once or more	543	11

Three patients were not delivered by the hospital service Of the remaining forty-four, seven had a blood pressure of eighty, which was the lowest recorded in the series One patient had moderate shock following the manual extraction of a retained placenta, but her blood pressure was low only once and reached normal before delivery All others had uneventful confinements

TABLE 2 —BLOOD PRESSURE BELOW 90

	Cases
At last visit to clinic only	13
At one visit but rising before delivery	29
At two visits or more not rising before delivery	3
At two visits or more, but rising before delivery	2
Total	47

An additional review of moderately low blood pressure (between 90 and 100) shows that of the 357 cases delivered by the hospital service, shock unaccompanied by hemorrhage did not occur once after normal delivery, and only four times after operative delivery In only one of the four operative cases was the blood pressure found between 90 and 100 at more than one visit to the clinic

TABLE 3 —BLOOD PRESSURE BETWEEN 90 AND 100

	Cases
At last visit to clinic only	175
At one visit but rising before delivery	157
At two visits or more, not rising before delivery	25
At two visits or more but rising before delivery	26
Total	383

A comparison of Tables 2 and 3 will show that while occasional instances of low blood pressure are frequent, a pressure consistently below 90 occurred only once in 1,000 pregnancies, and a pressure consistently between 90 and 100 once in 100 cases This tendency to low blood pressure is *apparently* an individual peculiarity of the patient, and does not seem to be followed by a poor reaction to labor

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[1] Newell F S The Blood Pressure During Pregnancy The Journal A M A, Jan 30 1915 p 393

[2] Haussling Jour Med Soc. New Jersey 1912 ix 242

[3] Lynch Surg Gynec and Obst. 1913 xvii 472

I believe with Lynch that shock occasionally follows labor without apparent reason Such an occurrence seems to be more common in private than in hospital practice, and is particularly likely to succeed some comparatively slight operative procedure, such as an easy low forceps delivery The Crile theory of shock seems to offer the best explanation Following rapid evacuation of the uterus there comes a marked lowering of intra-abdominal pressure, and thereby the external mechanical support of the splanchnic vessel walls is diminished Should vasomotor control be inefficient, these vessels become enormously distended with blood, and the patient bleeds into her own abdominal vascular system The resultant anemia of the medulla completes the familiar picture of surgical shock It is evident that such a condition presupposes a certain instability of vasomotor equilibrium, but that it may be foretold during pregnancy by a low blood pressure is not borne out by our observations

TABLE 4 —ELEVATED BLOOD PRESSURE, ALBUMINURIA AND TOXEMIA ACCORDING TO AGE

Age	No of Cases	Percentage of— Elevated Blood Pressure	Albuminuria	Toxemia
Under 20	121	11 4	20 0	2 8
From 20 to 30	3,165	8 9	13 7	1 0
From 30 to 40	1,283	14 3	12 2	1 5
From 40 on	131	22 1	17 5	1 5

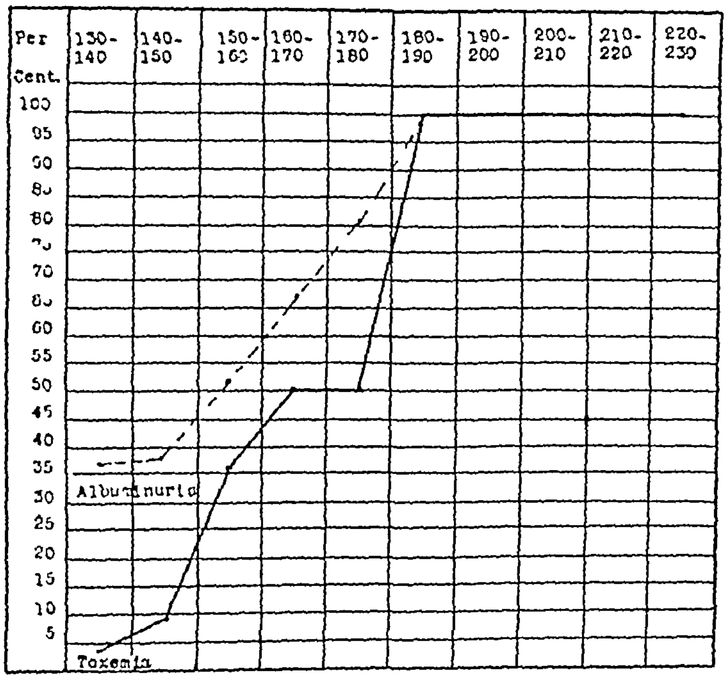

Chart 1 —Curves of toxemia and albuminuria expressed in terms of increasing blood pressure

3 THE SIGNIFICANCE OF HIGH BLOOD PRESSURE (OVER 130)

I have attempted to point out what influence, if any, age, race or nationality and parity had on elevated blood pressure, and have also noted any apparent effect on albuminuria and toxemia Since in this series all patients considered toxemic during pregnancy exhibited at some time both an elevated blood pressure and albuminuria, the term "toxemia" is applied to those who had these two manifestations of the disease, plus one or more of the other recognized signs and symptoms, such as headache, disturbances of vision, persistent vomiting, epigastric pain, antepartum hemorrhage and edema

TABLE 5 —ELEVATED BLOOD PRESSURE, ALBUMINURIA AND TOXEMIA ACCORDING TO NATIONALITY

Country	No of Cases	Percentage of— Elevated Blood Pressure	Albuminuria	Toxemia
Russia	2,322	9 2	11 2	0 8
America	873	15 1	22 2	1 8
Italy	606	5 1	9 0	1 2
Austria	215	7 9	9 3	0 0
Ireland	210	11 9	17 6	2 4
Poland	172	5 8	8 1	0 6
British North America	158	17 7	18 3	3 2
Negro	105	13 4	25 7	3 8

Age—Albuminuria and toxemia occurred most frequently in gravidas under 20 In this class of patients, elevated blood pressure was also fairly frequent and was, apparently, more commonly then a sign of toxemia than later in life

Elevated blood pressure was most common in elderly gravidas, but with them was seemingly less important as an evidence of toxemia Many women in the neighborhood of 40 habitually ran a low normal blood pressure, but a stationary pressure of moderate elevation was more common with them as a class than with younger women In the decade between 20 and 30, elevated blood pressure and toxemia were least common

Race and Nationality—Elevated blood pressure was most common among the British North Americans, Americans, negroes and Irish These classes also showed the highest proportion of albuminuria and toxemia Toxemia appears to be uncommon among the Russians (practically all Jews) and the Slavs (Austrians and Poles)

Two races are represented, the white and the negro Of the white race there were thirty different nationalities Only those with at least 100 representatives have been considered in Table 5

Parity—In primiparas there was a fairly high percentage of elevated blood pressure which was not accompanied by a correspondingly high percentage of toxemia It will be seen in comparing Tables 5 and 6 that youth has apparently more influence than primiparity on the occurrence of toxemia In general, the frequency of elevated blood pressure tended to increase with successive pregnancies from the second to the eighth The percentage of albuminuria showed nothing characteristic, nor did the number of pregnancies appear to have much influence on the frequency of toxemia

One patient was a sedecipara and two were quindeciparas No class containing less than 100 individuals has been considered

TABLE 6 —ELEVATED BLOOD PRESSURE, ALBUMINURIA AND TOXEMIA ACCORDING TO PARITY

Parity	No of Cases	Percentage of— Elevated Blood Pressure	Albuminuria	Toxemia
Primiparas	1,679	12 2	14 8	1 1
Secundiparas	1,036	7 5	11 7	0 9
Tertiparas	696	7 9	11 8	1 0
Quartiparas	508	11 8	14 6	1 4
Quintiparas	360	8 9	10 6	0 6
Sextiparas	261	10 7	9 2	0 8
Septiparas	177	13 8	11 4	0 6

Comparative Values of Albuminuria and Elevated Blood Pressure as Signs of Toxemia—(*a*) Frequency of Uncomplicated Albuminuria and Elevated Blood Pressure Uncomplicated albuminuria was one and one-third times as frequent as uncomplicated elevated blood pressure Often, no doubt, it was due to a contamination from leukorrheal discharge Several writers, however, have reported that albumin may be obtained in catheter specimens during pregnancy in a considerable number of cases, without any pathologic significance being attached to it Elevated blood pressure then, per se, is a more frequent sign of toxemia Albuminuria without elevated blood pressure or toxemia occurred in 463 cases, and elevated blood pressure without albuminuria or toxemia in 340 cases

(*b*) Priority of Appearance An elevated blood pressure is often the first sign of an approaching toxemia In the present series it preceded albuminuria twice as often as it followed it The majority of patients, however, presented both albuminuria and elevated blood pressure at the same visit to the clinic Elevated blood pressure preceded albuminuria in fifty cases, accompanied albuminuria in 113 cases, and followed albuminuria in twenty-four cases

(*c*) Frequency Percentage of Albuminuria and Toxemia with Increasing Elevation of Blood Pressure One patient in thirty-two with a blood pressure between 130 and 140 had toxemia, and one patient in eleven with a pressure between 140 and 150 Between 150 and 160, the frequency suddenly rose to more than one in three, while one half of all patients between 160 and 180 developed the disease All patients above 180 had toxemia The abrupt rise in both toxemia and albuminuria when 150 is reached indicates in a striking manner that the danger point lies near that point (Chart 1)

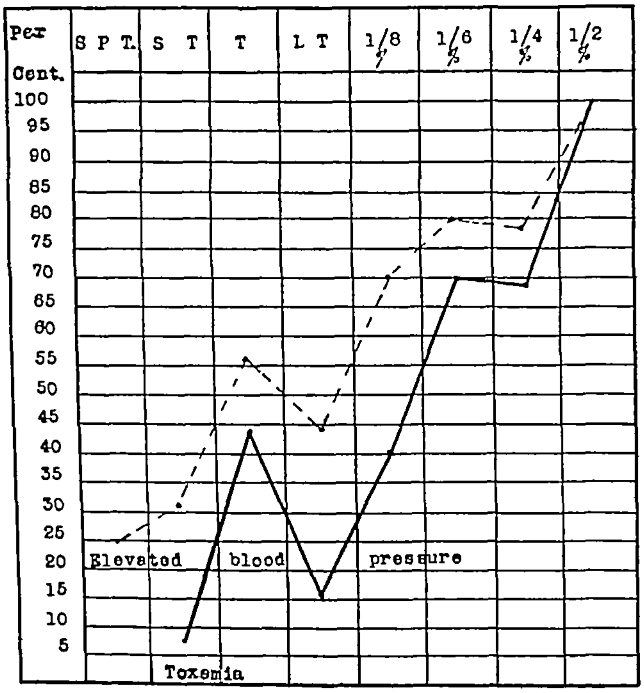

Chart 2 —Curves of toxemia and elevated blood pressure expressed in terms of increasing albuminuria The degree of albuminuria is expressed in the common clinical terms S P T slightest possible trace S T slight trace, T, trace, L T large trace.

(*d*) Frequency Percentage of Blood Pressure and Toxemia with Increasing Degrees of Albuminuria The curve of toxemia shows a steadier rise when expressed in terms of increasing blood pressure, as in Chart 1, than when expressed in terms of increasing albuminuria, as in Chart 2 Moreover, the blood pressure curve in Chart 2 is a faithful copy of the toxemia curve, while the albuminuria curve in Chart 1 bears a much less striking resemblance to the line of toxemia With less than a slight trace of albuminuria, no cases of toxemia were encountered

In summarizing, it is fair to say that elevated blood pressure is more commonly an index of toxemia than albuminuria, and that it is apt to be an earlier sign The degree of elevation points more surely to the likelihood of toxemia than does the degree of albuminuria Both, however, are of the utmost importance

Elevated blood pressure without albuminuria or evidences of toxemia occurred in 340 patients Many of those with occasionally elevated pressure were admittedly constipated, and doubtless others were equally so, although denying it stoutly In the vast majority the rise was temporary, and promptly succumbed to the generous administration of magnesium sulphate A number, however, had a persistently elevated pressure, although it rarely reached the upper levels Apparently this condition was normal for these patients, just as low blood pressure was normal for another group

Toxemia —Sixty-four patients, which was 1 4 per cent of the total number, developed signs and symptoms of toxemia Ten of these patients ceased attendance at the clinic and were delivered elsewhere In the sixty-four patients, nephritic toxemia, defined by Williams as "associated with primary lesions of the kidneys," and "usually noted in women who were suffering from chronic nephritis prior to pregnancy, or in whom the acute process originates during that period," occurred six times, and twice in one patient The remaining fifty-eight cases were true preeclamptic toxemias

(*a*) Seasonal Variations Chart 3 characterizes toxemia as a disease of cold rather than of warm weather, thus confirming the impression we have had at the Lying-In Hospital It is not unlikely that increased diaphoresis and consumption of water in the warm season aids in the elimination of the toxins on which this disease is supposed to depend

(*b*) Signs and Symptoms Edema and headache were most common True epigastric pain was rare and usually of ominous prognosis No antepartum bleeding was noted in any case Apparently, then, it is not a common sign of this disease

(*c*) Albuminuria All toxemic patients had more than the slightest possible trace of albumin

(*d*) Elevated Blood Pressure A pressure above 130 was noted in all toxemic patients at some time during pregnancy Twenty-seven patients had an elevated blood pressure when first seen at the clinic Thirty-seven had a progressively rising pressure, often from a low level I believe that this is a better sign of approaching toxemia than a moderately elevated pressure which remains stationary, a point which has been frequently emphasized by Newell

Eclampsia —Nine patients out of 4,472, the number actually delivered by the hospital service, had eclampsia This is 1 497, which is about the same ratio as that given by Williams 1 500 Five were primiparas and four multiparas Eight of these patients had toxemia The other, whose blood pressure was 94 with a negative urine and no evidences of toxemia at her last visit to the clinic six weeks before labor, had two postpartum convulsions No examination of the urine was made at that time, and the blood pressure was not determined, although the record states that the patient's pulse was of high tension The moral pointed by this experience is that the blood pressure should always be taken *both at the time of labor and immediately following it*

Six of the nine eclamptics did not report to the clinic for over a month before the onset of the seizures, and two of these patients died Only three patients who faithfully followed directions developed eclampsia, and only one of them died

With the exception of the eclamptic whose last recorded blood pressure was 94, there was only one patient whose pressure had *not reached at least 160* before convulsions occurred Her highest point was 140 which substantiates a statement often made by other writers that eclampsia may occur with a blood pressure of only moderate elevation The last previous record of this patient's blood pressure was only 110, which was apparently normal for her This case again indicates that a rising blood pressure from a low level, even though it does not pass the arbitrary danger mark, *may be a sign of impending trouble*

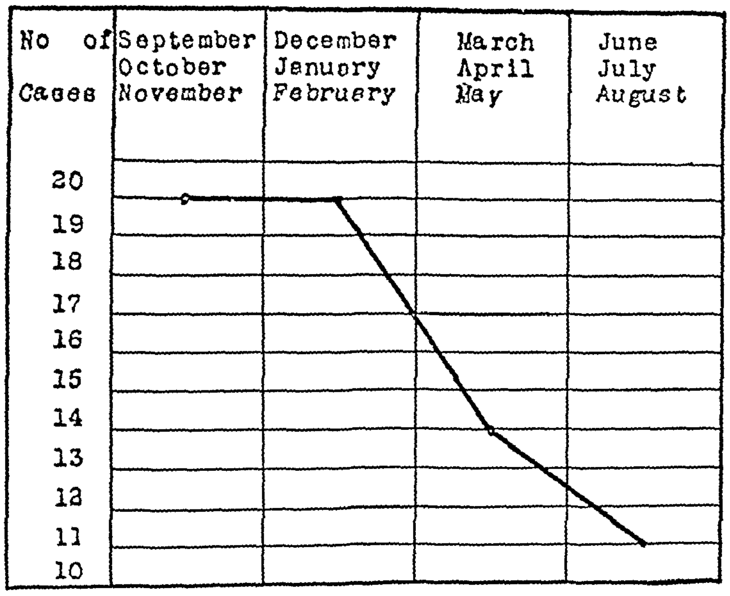

Chart 3 —Toxemia according to seasons

4 TREATMENT OF TOXEMIA

In general, the treatment at the Boston Lying-In Hospital has followed certain definite lines, although not all members of the staff in the past have by any means concurred in the ideas here expressed All patients in the pregnancy clinic showing albuminuria or a blood pressure above 130 are at once put on a meat-free diet with restricted salt and forced fluid The patient is directed to take large doses of magnesium sulphate and to return to the clinic in a few days Should evidences of toxemia develop she is admitted to the hospital, where she is put to bed and the same treatment more vigorously carried out Should her condition grow worse or fail to improve, the majority of the staff terminate pregnancy without waiting for convulsions to occur In the past, however, eliminative treatment has occasionally been carried beyond this point, not always with favorable results

Eliminative treatment alone was successful in twenty-nine of the fifty-eight cases The process quieted down, and pregnancy was allowed to continue or labor ensued In eleven cases labor was induced by Voorhees bags, which acted satisfactorily in nine

One patient died undelivered after eliminative treatment A second died after a five months' spontaneous miscarriage, and the third after a full term normal delivery Although nine eclamptics is too small a number on which to base any conclusions, it is quite evident that none of the women who were lost died as the result of a so-called violent operative delivery

CONCLUSIONS

1 In 80 per cent of *pregnant women*, the blood pressure ranges from 100 to 130

2 In 9 per cent the blood pressure may be below 100 once or more A blood pressure below 90 does not mean that the patient will have shock unaccompanied by hemorrhage at the time of confinement

3 In 11 per cent of cases, the blood pressure may be above 130 once or more Age, nationality and parity seem to have some influence on blood pressure *High blood pressure in the young* is more frequently a sign of toxemia than in those over 30

4 Elevated blood pressure is more commonly an index of toxemia than is albuminuria, and it is apt to be an earlier sign The degree of elevation points more surely to the likelihood of toxemia than does the degree of albuminuria Both, however, are of the utmost importance

5 Isolated cases of elevated blood pressure unaccompanied by albuminuria or evidences of toxemia occurred not infrequently Usually they *responded to* free catharsis Some pressures remained elevated in spite of treatment, and apparently were normal, during pregnancy at least, for the patients who exhibited them

6 A progressively rising blood pressure, often from *a low level, even though* it never reaches the arbitrary danger point, should be regarded with apprehension as a most valuable sign of approaching toxemia

7 Toxemia is much more common with a blood pressure above 150 than it is below that point

8 Most cases of eclampsia occurred with a pressure of 160 or more Eclampsia may, however, occur with a pressure of only moderate elevation

9 All toxemics developed both albuminuria and *elevated blood pressure*

10 While the incidence of eclampsia in this series is about the same as the figures usually given, it is significant that two thirds of the patients who developed convulsions absolutely neglected advice and refused to return to the clinic Had these patients been discharged against advice *during pregnancy* for *disobeying instructions, very favorable* statistics would have been obtained The hospital feels that it would be most unjust to the ignorant foreigners who constitute the vast majority of its patients to desert them when they most needed skilled hospital care With proper cooperation from the patients, and eliminating the fulminating cases which develop in a few hours, there is no doubt that eclampsia should be practically a preventable disease

96 Bay State Road

State Production of Quinin—In Italy, according to *Commerce Reports*, for several years the government has manufactured quinin for use against malaria For the fiscal year ended June 30, 1914, according to the report of the director of the laboratories, the total receipts from the sale of quinin were $611,283, on which a net profit of $159,979 was realized The whole of this sum was devoted to scientific investigation, draining of unhealthful districts, distribution of free quinin, and other preventive and curative measures against malaria The laboratories are situated at *Turin*, Rome and other cities

NONADHERING SURGICAL GAUZE

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It is essential to give a summary of the various surgical dressings experimented with in order to convey the extent of the author's research work during the past two years.

WORK WITH VARIOUS DRESSINGS

Plain Surgical Gauze.—For the treatment of open wounds presenting raw surfaces the plain gauze of narrow mesh is preferable to gauze of wide mesh as commonly used today for surgical dressings. The narrow mesh does not present wide apertures through which the granulations will grow, and when removed, the granulations are less interfered with. The absorbing quality of the narrow mesh is superior to that of a wider mesh. The gauze of wide mesh, owing to the width of apertures between the threads, permits the granulating tissue to extend upward and overlap the threads, so that in removal of the dressings the granulations are lacerated with the oozing of blood, and pain is caused to the patient.

Surgical Cotton.—This form of dressing is absolutely contraindicated in dressing raw surfaces or open wounds, especially when it is placed in direct contact with the wound. The cotton becomes saturated with the exudate from the wound and adheres to it, causing great discomfort to the patient at removal. The small cotton fibers become attached to the raw surface, remain in the wound and retard healing by their presence. The cotton dressing closely adhering to the wound acts as a seal, retains the discharge, favors bacterial growth and keeps the wound bathed in secretions.

Chamois Skin.—The best grade of chamois skin obtainable on the market was secured and sterilized by dry heating. The wounds to be experimented on were freed of all foreign bodies, cleansed with benzin, tincture of iodin was applied, the excess iodin was sponged off, a sterile piece of chamois skin was placed in direct contact with the wound and a sterile gauze bandage was applied. There were no decided advantages in the use of this material, and the disadvantages were many: the high market value of the chamois skin, and the fact that it is saturated quickly, allowing the excess secretions to bathe the wound, that it is impaired by sterilization, and that its life is good for only one dressing. It was easily removed in all cases.

Gutta Percha Tissue.—In a large majority of cases, gutta percha did not adhere to wounds or raw surfaces, but, owing to its impermeable qualities, the secretions were retained in wounds with extreme moisture present, and favored bacterial growth. In order to overcome this retaining feature, the gutta percha was perforated with small holes, one-eighth inch in diameter, and fluff dressing placed above the tissues. The end-results of this were favorable in a great majority of cases, the fluff dressing taking up the secretions and being easily removed. The perforated gutta percha was removed with a minimum of discomfort to the patient. One disadvantage was that the fluff gauze would adhere to the raw tissue under the perforations of the gutta percha, and cause oozing because of lacerations of the granulations.

Silver Foil.—This dressing has the same disadvantages as gutta percha. It seemed to have a germicidal effect on wounds, as very few cases developed sepsis. Perforated tin or silver foil gave no beneficial results over gutta percha.

Paraffin or Oiled Paper.—The stiffness and texture of such dressings when applied to sensitive raw wounds caused great discomfort to patients. It gave practically the same results as gutta percha.

Rubber Dam (Dental).—Unperforated rubber dam was useless, and when perforated it gave no advantages over gutta percha.

Narrow Mesh Fine Silver Wire Screen.—This was used in a number of cases, and a fluff dressing placed over it, but, owing to pain in its application to the wound, and to the discomfort experienced by the patient while it was in place, it had no decided advantage.

Medicated Gauze Dressing.—Regardless of the ingredients used to medicate the gauze when placed in contact with the raw surfaces and allowed to remain for any length of time, the dressing was found to adhere when attempts at removal were made. Narrow mesh gauze medicated with iodoform has less adhering qualities in the dry state than any other form used, but, owing to its disagreeable odor, it was abandoned. Wet medicated gauze dressings had less adhering qualities, but the part was macerated and the wound kept moist. When allowed to dry, these dressings all adhered.

Gauze impregnated with oily ingredients, such as balsam of Peru, etc., did not adhere, but the ingredients were quickly absorbed if the dressing was left in situ for any length of time, with the result that the dressings became attached to the wound.

Petrolatum impregnated gauze adheres more quickly than a gauze impregnated with a heavier cerate, owing to the fact that the lighter petrolatum is quickly absorbed by the tissue, and the cerate from cerate impregnated gauze is absorbed more slowly. The main disadvantage was from the constant wet condition of the wound, the absorbing quality of the gauze being lessened, owing to the impregnating medicine.

Cold Cream.—It was found that gauze impregnated with a pure, high grade facial cold cream gave very beneficial results, and adhering was less than when other greasy or oily ingredients were used.

Powder Dressing.—Powder (medicated) in any form, while causing a drying up of the wound secretions and adhering less, was difficult to remove from the wound. Owing to its crusting in the wound, it made a seal for infection to develop in the retained secretions.

PARAFFIN IMPREGNATED GAUZE

This embodies all the advantages of most of the dressings mentioned above, and has very few, if any, disadvantages. The gauze used is a medium sized meshed material impregnated with boiling paraffin and white petrolatum, and allowed to dry while being constantly agitated so as to free the apertures between the meshes of excess paraffin. When dried, the gauze is very flexible and presents a waxed screen, which is placed in contact with the wound. Fluff dressing is placed above it. The dressing when removed is found to contain the secretions from the wound, leaving the raw wound surface practically dry. When the paraffin gauze screen is exposed, it is found in close contact with the raw surface. On attempt at removal it separates very easily from the wound with almost no pain and no injury to the little granulations that have formed since the dressing was applied The paraffin is not absorbed by the tissues The granulations do not cling or become attached to the wax surface of the gauze, and no bleeding is present The petrolatum, owing to its oily nature, seems to make the gauze more flexible, as it retards the hardening feature of the paraffin The overlying fluff gauze has very little opportunity of adhering to the granulations in the aperture of the paraffin screen, owing to the minimum amount of surface presented The paraffin gauze allows free drainage of the wound into the fluff gauze by capillary attraction, so that a dry wound is usually found It can be resterilized as frequently as desired by immersion in absolute grain alcohol

The results of use of the paraffin impregnated gauze in the medical department of the elevated railroads of Chicago have been gratifying, and it is in daily use in the treatment of all classes and conditions of wounds, such as clean septic wounds, abrasions, burns, and in applications over suture lines in operations At present quite a number of physicians are cooperating with me in testing out this gauze in their practice, and full detailed reports of their results are being obtained

PREPARATION OF NONADHERING SURGICAL DRESSING

The purest grade of paraffin wax is brought to a temperature of 450 degrees F by electric heat in a porcelain lined vessel White petrolatum or lanolin (wool fat) is added in the proportions of 8 parts of paraffin to 2 of petrolatum or lanolin This mixture is allowed to dissolve and boil for ten minutes, when it is ready for the gauze

White gauze of either wide or narrow mesh, cut in strips of 8 by 24, is given two separate sterilizations of one hour each in an electric, dry, hot air sterilizer at a temperature of 300 F

The gauze is then immersed in the paraffin solution and allowed to remain for ten minutes in order that the gauze fibers may be thoroughly saturated The gauze is gradually removed from the solution and is stretched, and a current of filtered air is directed against the gauze to free the apertures of excess paraffin

The gauze is allowed to dry, and then presents a waxed screen which is flexible according to the amount or proportions of petrolatum used with the paraffin

The dried wax gauze is cut and packed in bulk in sterile glass containers, and sealed so as to exclude air and dust When needed for the treatment of wounds at the surgeon's hands, the jar of gauze is opened and the necessary amount to be used is placed in direct contact with the wound or raw surface, one or two layers of nonadhering gauze placed on the wound, and ordinary surgical gauze placed above the waxed screen The gauze can be changed as frequently as desired, and the wax screen can be left on for a more lengthy interval

Paraffin-Stearic Acid Dressing—A second formula for the nonadhering surgical gauze, which permits of greater length of time in contact with raw surfaces without sticking, is the paraffin-stearic acid impregnated gauze In the preparation of this dressing, paraffin wax is brought to the boiling point at three different intervals in the course of one hour and filtered through a narrow mesh gauze in lieu of filter paper The purpose of this frequent boiling and filtration is to bring it to a sterile state and free it from any foreign bodies like minute particles of grit, etc

During this procedure, the stearin (stearic acid) is brought to the boiling point and filtered by the same process for the same number of times

Then equal portions of the liquid hot paraffin and liquid hot stearic acid are poured into a white porcelain container and again brought to the boiling point and filtered as described above The mixture is then ready for the sterile wide mesh gauze, which is immersed in it for ten minutes to allow the gauze to become thoroughly impregnated with the fluid The wet gauze is then removed and stretched, and the excess mixture allowed to drain off A jet of filtered and heated air is directed against the gauze, causing the film of wax over the meshes to melt and allowing a more uniform waxed screen When dried, the gauze is placed in a sterile container and sealed

The paraffin-stearic acid gauze dressing gives the added advantage over the paraffin-petrolatum gauze that it can remain a longer time on the wound without any adherence whatever The flexibility is greater, the fibers have an additional coating of nonagglutinating substance Wounds treated with this gauze are shed readily from the gauze when the healing process is complete

ADVANTAGES

Some of the advantages of the nonadhering surgical dressing are as follows

1 It does not become matted with secretions and debris from the wound, owing to its waxed fibers

2 The paraffin is not absorbed by the tissue

3 The granulations of tissue repair do not cling or adhere to the waxed gauze, as is the case with all other surgical gauze used

4 The nonadhering gauze will not adhere to wounds when left on for any great length of time

5 It stimulates tissue growth

6 Because of the flexibility of the nonadhering gauze, it closely conforms to the surface to which it is applied

7 It causes no pain to the patient at the time of application or while it is in place on the wound

8 No pain or discomfort is caused the patient when it is removed from the wound

9 Owing to its being a dry dressing and free from matting, it permits of adequate drainage of wound secretions

10 It is easily and quickly sterilized by immersion in absolute grain alcohol for days, without impairing its usefulness

11 Two years' treatment of wounds of all varieties has shown its decided advantages over all other dressings in use

12 There is freedom from infections during its use

13 When allowed to remain on indefinitely, it becomes separated of itself, leaving the healthy, healed wound underneath

14 By these advantages it hastens the convalescence or healing of wounds

15 Application to clean surgical operations on the line of suture prevents adherence of the ordinary gauze dressing

16 It is of value in covering skin graft cases, as it permits freedom of drainage

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DIPHTHERIA IN MANILA

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During the last of September and first of October, 1915, six patients with diphtheria were admitted to San Lazaro Hospital, with five deaths All of these patients except the one who recovered had been sick for a week or more on admission, and all of the deaths were due to toxemia, nephritis, bronchopneumonia or some other complication

It has been known practically since American occupation that diphtheria existed in the islands, but this little outbreak showed more cases than usual for a given period, and also, from the high mortality, a greater virulence

The delay in getting these patients to the hospital was due, in great part, to the ignorance of the relatives or friends of the patients as to the true nature of the disease, as they thought it was simply a sore throat, or "angina," until the condition became serious

In view of the foregoing facts, and as diphtheria has undoubtedly gradually increased in Manila during the past few years, it was thought best to take somewhat extraordinary preventive measures Another strong factor in influencing the director and other officials of the Philippine Health Service toward taking these measures was the fact that diphtheria antitoxin was very scarce at this time, there being on hand enough for only a very few severe cases

It was therefore decided to take specimens from the throats of schoolchildren in Manila, and from all persons in any way contacts of positive cases It has for years been the rule to take specimens from all direct contacts, but at this time it was thought necessary to carry out operations on a more extensive scale, and in a more thorough manner Accordingly, during the months of October and November more than 7,000 throat specimens were taken, and of these more than 600, or about 9 per cent, were found positive for diphtheria by the Bureau of Science

The greatest number of carriers admitted to San Lazaro Hospital on any one day was 130, October 15, and the greatest number in hospital at any one time was 246, October 21 Two consecutive negatives on different dates were required for discharge, and the longest time any carrier was held was seventeen days, although on a former occasion one was held as long as forty days Of the number of carriers mentioned, more than twenty, or about 4 per cent, developed symptoms of diphtheria—fever, sore throat, etc—after entering the hospital, and received serum, the average dose for these being a little less than 3,000 units It is believed that most of these cases which developed from carriers would have become quite severe without the early use of serum, and that several of the patients would undoubtedly have died, besides this direct saving of life it is very probable, in fact almost beyond doubt, that the preventive measures taken against diphtheria saved Manila from a more or less severe epidemic

Diphtheria among both Americans and Filipinos is well known in Manila and the islands, and does not differ essentially from the disease as found in the United States Antitoxin is always used freely, and almost invariably with success when the patients are brought to the hospital in fair season One good effect of the publicity given to the antidiphtheria measures taken by the Philippine Health Service, through the great number of people examined, has been the voluntary presentation at the hospital, both from the city and from the provinces, of numerous patients in the early stages, who have all recovered Manila is at present practically free from diphtheria, there is only one mild case in the hospital and there are no carriers

All classes of Americans and Filipinos were among those quarantined, and the enforced imprisonment was, as a rule, undergone with patience and equanimity

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STUDIES ON DIPHTHERIA

II THE TREATMENT OF DIPHTHERIA CARRIERS BY TONSILLECTOMY *

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AND
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In another paper[1] we have given our views on some of the phases of the carrier problem in diphtheria, and have called special attention to our definition of a "carrier" and to our tentative classification of the various forms of *Bacillus diphtheriae* For better understanding of the following remarks we may again state our definition of a true carrier, namely, that such a person in order to become a true carrier must harbor *virulent* diphtheria bacilli (in or upon the tissues) for a period of twenty-one days or more

In the endeavor to get rid of these menaces to the health of the community, a great variety of measures have been attempted We have tested out to our own satisfaction many of the measures advised, but have not found them worthy of routine procedure

The methods of treatment for freeing carriers of the organisms may be divided into three classes

1 BIOLOGIC PRODUCTS

Various biologic products have been used in numerous series of cases with indifferent results The diphtheria antitoxin of course should not be considered, as it has no effect on the organism It might be noted in passing that it is remarkable how long the idea obtains in the minds of many physicians that antitoxins can in some way affect *Bacillus diphtheriae* in the body Toxin-antitoxin mixtures are also useless

Petruschky[2] seems to have been the first to use a vaccine His results, while suggestive, are far from conclusive, and further work along this line must be done before discarding his method

Hewlett and Nankivell[3] were the first to use a "vaccine" having as its active principle the "endotoxin" They prepared their vaccine from *Bacillus diphtheriae* by using a modification of the Macfadyen-Rowland method Their results seem to give more promise than those of Petruschky In a personal communication Dr Hewlett states that he is quite certain of the efficacy of the treatment, and only awaits the opportunity for a more extended trial with the "endotoxin"

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[1] Ruh H O Miller M J and Perkins R G Jour Infect Diseases to be published.

[2] Petruschky Arb a d path. Inst. zu Tubingen 1908 vi Pt. ii p 331

[3] Hewlett and Nankivell Lancet, London, July 20 1912 p 143 Hewlett Ibid June 28 1913

The antibacillary serum prepared by L Martin and Wassermann[4] and that prepared by the Lister Institute have not proved of value

Opsonins, which were demonstrated in diphtheria patients by Tunnicliff,[5] have not been found to be of practical value in the treatment of the carrier

Attempts to substitute some nonpathogenic or pathogenic organism for *Bacillus diphtheriae* by direct local inoculation seemed for a short time to have solved the problem, and many successful results have been claimed after inoculation of various organisms Among these may be noted *Staphylococcus pyogenes aureus, Bacillus bulgaricus,* lactic acid organisms of various types, yeast, and even some of the higher molds These have been tried in our series, but with no such success as to warrant continuance

We have come to the conclusion that the use of a series of unselected cases involves the error due to the lack of certainty as to the time in which the organisms will disappear Cultures showing a great majority of diphtheria forms on one day will suddenly show progressive diminution with the development of negative cultures in three or four days, while others will persist with morphologic changes and slow disappearance

Nine children who had resisted local treatment for almost three months were treated three times a day for three weeks with an emulsion of a twenty-four hour milk culture of a *Bacillus bulgaricus* strain giving 2 6 acid There was no apparent decrease in the number of diphtheria organisms A mixture of several strains of *Staphylococcus lacticus* of Esten type, grown in lactose agar, washed off in normal saline, was then applied as a spray for four weeks with no result Previous work in routine cases of less obstinate carrier propensities had been done with similar results We noted that, while there might be at times a diminution and even a disappearance of the diphtheria organisms, cessation of the treatment for a few days always resulted in the reappearance of the organisms, and we believe that the great majority of successful cases obtained by these methods are either those in which organisms were about to disappear, or in which later cultures would have shown that they were merely temporarily overridden

2 CHEMICAL SUBSTANCES

Direct local treatment by chemical substances has been a failure in the hands of the great majority of men In a limited number of cases there have been apparently successful results, but the number is not such as to show that these cases would not have become free from the organisms without treatment Indeed, as a result of our own observations and in agreement with those of Park and others, we are inclined to believe that undue handling of the mucosa in the nose and throat tends to stimulate the persistence of the organisms rather than their disappearance

Among the medicaments employed with occasional successful results there may be mentioned phenol (carbolic acid), iodin, alcohol, potassium chlorate, chromic acid and liquor formaldehydi The latest substance to be recommended is kaolin Hektoen and Rappaport[6] concluded that on account of the great adsorptive power of this substance its use in the treatment of diphtheria carriers should be of great benefit They state that in cases in which it was properly applied, it removed *Bacillus diphtheriae* in three or four days Our own results with this method of treatment have not been so successful With diphtheria infection in the tonsils it has so far been without effect It may be that with an improvement in our technic of application better results may be obtained

3 MECHANICAL METHODS

It has been our custom at the contagious department of the Cleveland City Hospital to select a certain proportion of diphtheria carriers, when the organism is found in the tonsils, for treatment by the mechanical method of tonsillectomy and adenoidectomy Although nothing new or original is claimed for this method, we believe that by a comparison with other methods of treatment some conclusions can be reached which are not possible in other and less extensive series of cases On careful comparison we have come to the conclusion that at present the quarantine period can be shortened considerably Nineteen cases in all have been selected for operation It will be noted in the accompanying table that all of these patients carried the infection in the crypts, while cultures in some cases (Cases 8, 12,

RESULTS IN THE TREATMENT OF DIPHTHERIA CARRIERS BY TONSILLECTOMY

Case Number	Date Patient Entered Hospital	Cultures from Tonsil Crypts	Cultures from Tonsils on 21st Day	Day of Disease on Which Tonsillectomy Was Performed	Position from Which Cultures Were Taken after Tonsillectomy			Negative Cultures			Day of Discharge after Operation
					Surface	In Substance	Crypts	1st	2d	3d	
1	1/ 6/15	+	+	31			+	10	11		11
2	1/ 7/15	+	+	21			+	6	7		7
3	2/ 3/15	+	+	21	+		+	9	10		10
4	2/11/15	+	+	25			+	11	12		12
5	5/ 2/15	+	+	40		+	+	7	8		8
6	5/11/15	+	+	24			+	10	11		11
7	6/ 7/15	+	+	40	+		+	17	18	19	19
8	6/21/15	+	+	120	—		+	14	15		15
9	10/15/15	+	+	21			+	3	4		4
10	11/ 1/15	+	+	21	+	+	+	4	5		5
11	11/ 1/15	+	+	22	+	+	+	8	9		9
12	11/22/15	+	+	40	—		+	6	7		7
13	11/23/15	+	+	21	—		+	3	4	5	4
14	12/ 6/15	+	+	31			+	6	7		7
15	12/18/15	+	+	34		+	+	9	10		10
16	12/25/15	+	+	21	+		+	3	4	5	4
17	1/ 5/16	+	+	25	+	+	+	3	4	5	4
18	12/ 2/15	+	+	40	—		+	4	5		5
19	12/30/15	+	+	36	—	+	+	3	4		4
Averages				31+				7+	8+		8+

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[4] Wassermann Ztschr f Hyg, 1895, xix, 408

[5] Tunnicliff Jour Infect Dis, 1905, v, 14

[6] Hektoen, L, and Rappaport, B The Use of Kaolin to Remove Bacteria from the Throat and Nose, The Journal A M A, June 12, 1915, p 1985

13, 18 and 19) were negative on the surface of the tonsil even when made after excision of the tonsil In all cases the cultures from the crypts after excision showed *Bacillus diphtheriae* in a nearly pure culture It may be noted in passing that there is a frequent source of error in taking release cultures if the swab is not passed into the crypts and as nearly as possible to the bottom

As might be expected, we have never experienced any adverse results from operating on a throat in which virulent organisms were present An antitoxic immunity to *Bacillus diphtheriae* is already present, and if there should be any doubt as to its presence, an intradermal toxin test (Schick's test) could be made

The reaction to the trauma of the operation is in no way more severe than in the ordinary operation We have found that the disappearance of the organisms coincides very closely with the disappearance of the pseudomembrane which forms after the operation Negative cultures are seldom obtained until all of the exudate formed after the tonsillectomy has disappeared

The table is self-explanatory Cultures are taken by routine, each day after the operation, from the nose, throat and posterior pharynx In a few cases a single negative culture was obtained earlier than stated in the table, but when this was followed by a positive, we have considered it due to some slip in technic in making the culture We have considered the first negative beyond question only when those taken on the following day have shown the same morphology This explains the fact that in the table the first and second negative cultures are always on successive days without any intervening positive cultures

It will be noticed from the table that the average duration of the carrier state in these selected cases was thirty-one days The average day of release from quarantine after the tonsillectomy was eight plus

In comparing these results with others and with our own results by other methods of treatment of carriers, we feel that at the present time this method of treatment offers to the patient a quicker release from quarantine, and to the public a greater assurance that the patient is no longer dangerous, than any other method of treatment

Note.—In a recent article, Ott and Roy[7] suggest the value of iodized phenol with carriers A careful examination of the article, however, leaves a less satisfactory impression Of the seventeen cases noted, two of the most important, admitted as carriers, were not followed and must therefore be excluded In all the other cases, both positive and negative cultures had been obtained previous to treatment and yet in every case one final culture two or three weeks after discharge is taken as diagnostic of cure. In our own experience, after a patient is a chronic carrier, the absence of organisms in a single isolated instance is of little value, and where we noted, as they have in several of their cases, that the tonsils were enlarged, we were always able to get positive cultures from the crypts We cannot feel, therefore, that there was any adequate evidence that this method of clearing up carriers is better than any of the other chemical means already reported

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[7] Ott W O and Roy K A The Treatment of Diphtheria Carriers with Iodized Phenol The Journal A M A, March 11 1916 p 800

Sleep —Sleep is Nature's great rejuvenator and the health seeker should avail himself of *it to the full* Our sleep should not only be sufficient in duration, but also in intensity, and should be regular —Fisher and Fisk How to Live

THE USE OF KAOLIN TO REMOVE DIPHTHERIA BACILLI FROM THE NOSE AND THROAT

FURTHER OBSERVATIONS *

B RAPPAPORT, M D
CHICAGO

In a preliminary note,[1] the use of kaolin to remove bacteria from the nose and throat was suggested on the basis that kaolin by means of its adsorptive property would carry with it bacteria with which it came in contact Since this report, a study has been made of this method in 100 unselected cases, ninety-six being diphtheria patients and four pure diphtheria carriers By "pure diphtheria carriers" is meant a person with diphtheria bacilli in the nose or throat, who yields no history of sore throat or other symptom of diphtheria, and who gives a negative Schick test

The method of the application of kaolin is as follows As crude kaolin, which is moist and lumpy, has not the adsorptive power of the thoroughly dried and finely powdered product, the crude material is first thoroughly dried for several days in a bacteriologic incubator The lumps are then broken up and the powder passed through a fine flour sieve This stock is kept in the incubator, and each morning the small amount necessary for the day's treatment is taken to the patient's room On damp days it is necessary, for best results, to take kaolin from the incubator oftener —two or three times during the day The point of this is that kaolin must be perfectly dry and finely powdered when applied, else the results will be disappointing

Whenever possible, the application of kaolin should be started as soon as the acute symptoms have subsided The kaolin must be distributed thoroughly over the surface to be treated When the mucous membranes are normal, this is attained more easily than when there is some pathologic condition present, such as enlarged tonsils, adenoids, or nasal disease and obstruction, here the thorough application of kaolin to the involved surface is difficult and often impossible In small children—of less than 3 years of age—kaolin is best applied directly to the nasal mucous membrane, even when the bacilli are in the pharynx, as the powder works its way through the nasopharynx into the throat The powder is blown into the nose by means of a rubber bulb attached to a glass tube with a tapering end that fits the nostril Six treatments at two-hour intervals during the day is the practice, as a rule To a large extent the powder remains in the nose, holding the organisms it has already taken up and preventing the kaolin of the next treatment from reaching the mucous surface, hence it is necessary at each treatment to remove the old kaolin before more is introduced For this purpose a mild alkaline spray does very well, such as a solution of sodium bicarbonate and sodium biborate, 2 per cent each

In the case of older persons, the powder is best applied to the pharynx by having the patient swallow it Four half-teaspoonful doses at two-hour intervals, six times during the day, are given as a rule The kaolin remains in the mouth and pharynx for some minutes, a sufficient time for it to take up the organisms with which it comes in contact

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* From the Memorial Institute for Infectious Diseases

[1] Hektoen L and Rappaport B The Use of Kaolin to Remove Bacteria from the Throat and Nose The Journal A M A June 12 1915 p 1985

Apparently, it is not necessary to give kaolin as often or in such large amounts as was at first suggested In the test tube, kaolin mixed with a suspension of bacteria, after an interval of five minutes, shows on the surface of each of its particles as many bacteria as after an interval of one or two hours It seems, therefore, that kaolin takes up rather quickly the organisms with which it comes in contact

Kaolin is not bactericidal, for fluid cultures of streptococci or diphtheria bacilli mixed with an abundance of kaolin give as good a growth as without the admixture of kaolin, neither does it protect guinea-pigs inoculated with virulent diphtheria bacilli Hence its action in removing bacteria from mucous surfaces would seem to be wholly mechanical

Before dismissal of any patient as free from bacilli, the cultures from nose and throat must be negative for at least three consecutive days after the discontinuation of the kaolin treatment, which is continued for from two to five days after the first diphtheria-free culture

The main results of this treatment, indicated by the length of stay in hospital, are shown in Table 1, which also gives for comparison the length of stay in hospital of the 100 consecutive patients dismissed preceding the routine use of kaolin In this group, negative cultures on three successive days were required for the discharge of the patient

TABLE 1—LENGTH OF STAY IN HOSPITAL OF 100 PATIENTS TREATED WITH KAOLIN, AND OF 100 PATIENTS UNTREATED

	Kaolin Patients		Untreated Patients	
Length of Stay	Number	Percentage	Number	Percentage
10 days			2	2
20 days	30	30	13	13 (15)
30 days	39	39 (69)	23	23 (38)
40 days	24	24 (93)	32	32 (70)
50 days	4	4 (97)	22	22 (92)
60 days	3	3 (100)	3	3 (99)
70 days			4	4 (99)
80 days			1	1 (100)
Average stay in hospital	25 61 days		33 45 days	

The ages of the two groups of patients are given in Table 2

TABLE 2—AGES OF THE PATIENTS

	Under 5	From 5 to 10	From 10 to 20	Over 20
Kaolin patients	28	34	20	18
Untreated patients	28	22	23	27

The average stay in the hospital for each of the kaolin patients was 7 84 days less than that for the untreated patients—a shortening of 23 4 per cent Not only was this a marked gain for the patients, it was also a great gain for the hospital, for the hospital had saved 784 days on the 100 patients treated with kaolin

Of various factors which may influence the results of treatment with kaolin, the only one of importance seems to be the location of the bacilli In the present series the nose was freed of diphtheria bacilli in half the time needed to free the throat Much depends on whether the bacilli are superficial or lodged deep in some crypt Table 3 gives the average duration of treatment according to the location of the bacilli

In 20 per cent of the patients receiving nasal insufflations of kaolin, the nasal cultures became sterile, usually in from three to five days Although in the pharynx, the tonsillar crypts, pillars, and other folds and irregularities afford excellent hiding places for the bacteria, rendering their removal more difficult, the larger number of this series became free of diphtheria bacilli in from two to four weeks of treatment with kaolin In six of the cases the bacilli were not removed in a considerably longer time (Table 1), in these the tonsils were diseased, not necessarily much enlarged, but with many crypts and irregularities, and there were in some cases, adenoids After removal of tonsils and adenoids in these six cases by Dr Friedberg,[2] five became negative immediately, as shown by negative cultures for several days afterward, and the sixth patient was freed permanently three days after the operation Microscopic sections of tonsils in these cases showed diphtheria bacilli in superficial ulcers located usually in crypts

TABLE 3—NUMBER OF DAYS OF KAOLIN TREATMENT BEFORE FIRST PERMANENTLY NEGATIVE CULTURE WAS SECURED

Kind of Cases	Number of Cases	Number of Days of Kaolin Treatment	Remarks
Nasal diphtheria	15	6 4	Average in 96 cases of diphtheria 11 9 days
Pharyngeal diphtheria	41	12 8	
Nasal and pharyngeal diphtheria	40	13 1	
Nasal carrier	1	5	
Pharyngeal carrier	1	39	Tonsillectomy
Nasal and pharyngeal carriers	2	8	

One carrier is of special interest Diphtheria bacilli had been present in the nose for two months before admission From the right nostril some mucopurulent discharge escaped After eight days' application of kaolin with no improvement, examination revealed a shoe button rather firmly embedded high in the right nostril Two days after the removal of the button the nose was permanently free from bacilli that a few days before had been virulent for guinea-pigs The button evidently had favored the persistence of the bacilli, most likely by protecting them from being taken up by kaolin

On comparing the figures obtained from analysis of the 100 kaolin cases with the figures given by Nuttall and Graham-Smith, I find that the results favor the use of kaolin Of the kaolin cases, 21 per cent, as compared with 11 8 per cent, were freed of diphtheria bacilli within ten days (Table 4), 59 per cent, as compared with 31 6 per cent, within 20 days, and 90 per cent, as compared with 51 4 per cent, within 30 days After thirty days the difference is also in favor of kaolin, but not so markedly

TABLE 4—COMPARISON OF THE TIME REQUIRED FOR DISAPPEARANCE OF DIPHTHERIA BACILLI IN 100 KAOLIN CASES WITH THAT REQUIRED IN GROUPS OF CASES OF SPONTANEOUS DISAPPEARANCE

Time Required for Disappearance (from Onset to First Permanently Negative Culture)	100 Kaolin Cases Per Cent	Nuttall and Graham-Smith* (from Different Sources) Per Cent.
Within 10 days	21	11 8
Within 14 days		
Within 20 days	59	31 6
Within 21 days		
Within 25 days		
Within 28 days		
Within 30 days	90	51 4
Within 35 days		67 7
Within 40 days	95	78 9
Within 50 days	99	86 1
Within 60 days	100	
Within 63 days		93 7
Within 80 days		97 1
Within 100 days		99 62
Within 200 days		

* Nuttall, G H F, and Graham Smith, G S Bacteriology of Diphtheria, New York, G P Putnam's Sons, 1908, p 420

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[2] Friedberg, S A Removal of Tonsils and Adenoids in Diphtheria Carriers, The Journal A M A, March 11, 1916, p 810

Patients with scarlet fever often have a persistent nasal discharge, and an attempt was made to stop this discharge by means of kaolin By plating and roughly estimating the number of bacteria, I found that kaolin *did not* lessen the number of organisms to any marked extent, although a purulent secretion changed to a serous one promptly Evidently the bacteria here are not so superficially placed as in diphtheria, or possibly they come from sinuses out of reach of the kaolin

It would be of interest to study the effect of kaolin on meningococcus carriers

CONCLUSIONS

When properly applied, kaolin by its adsorptive power mechanically removes bacteria with which it comes in contact, and its application to the nose and throat helps to remove diphtheria bacilli and to shorten the period of quarantine after diphtheria This action of kaolin is interfered with by various local pathologic conditions, which must be remedied as promptly as possible Removal of tonsils and adenoids is indicated when diphtheria bacilli persist unduly in spite of kaolin

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VACCINES OF FAVUS AND RINGWORM

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Several articles have recently appeared regarding the therapeutic use of vaccines of favus and ringworm Infections of the nails and scalp by these fungi cause conditions which are very resistant to any form of treatment Many of the reports on the use of these vaccines have been quite favorable In the immigration hospitals at Ellis Island we see many cases of this kind These hospitals are primarily diagnostic and only secondarily and relatively rarely therapeutic, especially in diseases which do not prevent prompt deportation of the sufferer The promise of early and successful results from vaccine therapy, however, has made the subject worthy of our consideration

These vaccines are more difficult to prepare than the usual bacterial vaccines, largely because of the slow growth of the organisms and the difficulty of getting them into a finely divided state for administration Most workers seem to grow them on solid mediums (French proof agar), scrape off the growth and rub it up in various ways Strickler[1] suggests rubbing up with crystals of sodium chlorid and then adding sufficient distilled water to make the proper solution Another difficulty with these vaccines is standardization of the dose The organisms cannot be counted and handled as bacteria are, and some other method must be adopted

After some experimentation we have tried a method somewhat different from the one usually recommended The organisms are grown in liquid medium, which is Sabouraud's proof medium, about the same as French proof agar without the agar Sabouraud's formula[2] is

Crude maltose (Chanut)	4 gm
Granulated peptone (Chassaing)	0 75 to 1 gm
Distilled water	100 gm.

This is the formula we have used, substituting, however, chemically pure maltose, Witte's peptone and tap water The finished product is acid in reaction and titrates from 0 5 to 1 acid to phenolphthalein This reaction is not modified The medium is put up in flasks of about 100 to 150 c c capacity, with about 50 c c to the flask, and sterilized in the usual manner for sugar medium The organisms are isolated on large plates of Sabouraud's glycerin agar,[3] and subcultured on large tube slants of the same material From these slants the flasks of liquid medium are sown, care being taken to plant a number of small pieces rather than one or two large ones, the growth being well broken up by the needle before transference

As a rule the organisms do not grow well at incubator temperature, and we are accustomed to place the flasks on top of a small incubator Within ten days or two weeks there is ordinarily sufficient growth for the preparation of vaccines

Under sterile conditions, the contents of the flasks are then poured into a filter paper on a funnel, the gelatinous growth is washed once or twice with salt solution, and when fairly dry is transferred from the filter to a glass dish, dried in the incubator, weighed and rubbed up in a mortar with crystals of salt, sufficient distilled water being finally added to make the proper solution Compound solution of cresol or tricresol is then added, the vaccine sterilized by heat, and cultured on Sabouraud's glycerin agar for sterility The growth may be rubbed up without drying either with salt crystals or with sterile broken glass, but it does not rub up so readily If dried, care should be taken so to arrange the material in the glass dish as to permit its fairly ready removal If smeared out in thin layers, it is sometimes difficult to remove A piece of platinum foil, if available, offers advantages over the glass dish

After completion it is placed in a well stoppered bottle and set in the ice chest While the result of the sterility test is being awaited, it is shaken daily Finally, when proved sterile, it is thoroughly shaken, left to stand a few minutes till the heavier particles settle, and the supernatant cloudy fluid is poured off, placed in proper containers, labeled and dispensed to the wards for use The heavier particles may also be thrown out by using the centrifuge at a low speed for a brief time

This method is, of course, more applicable to stock vaccines Autogenous vaccines may be used, but much time is thus consumed Most workers seem to have made use of stock vaccines containing three or four strains With some experience, however, the foregoing process can be shortened at several stages

One advantage of drying the growth is that by weighing, more accurate dosage is insured We have found our flasks in about two weeks to yield something like 100 mg each of dry material, but there is much variation The vaccines have been put up with 10 mg of the dry material to each cubic centimeter The initial dose is 3 or 4 mg We have given as much as 30 mg at a dose or even more General reactions have not often been observed The local reactions consist in a sluggish swelling which very

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[1] Strickler, Albert The Vaccine Treatment of Ringworm of the Scalp The Journal A. M A., July 17 1915 p 224

[2] Besson A Practical Bacteriology Microbiology and Serum Therapy New York, 1913 Translated by Hutchens

[3] This is composed of

Granulated peptone	2 gm
Pure anhydrous glycerin	4 gm
Agar	1 5 gm
Water	100 c c.

If 2 per cent of agar is added, the medium is firmer slowly disappears Some authors have described a prompt local reaction in the lesions — a focal reaction — but we have not observed such here Even when consideration is given to the fact that if heavy particles are allowed to settle not all of the dried material is used in the vaccine, it is still obvious that one can administer much larger doses of these vaccines than of bacterial vaccines

This note is concerned solely with the preparation of the vaccine itself and its method of use Our therapeutic experience has been too limited as yet for us to judge results But up to date our results have certainly not been brilliant

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CHAPARRO AMARGOSA IN THE TREATMENT OF AMEBIC DYSENTERY

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In former reports[1] I outlined the treatment of twelve cases of amebic dysentery by the use of chaparro amargosa As reported in a footnote,[2] there was a recurrence in Case 9, and the patient has continued to have trouble from time to time This patient, I believe, has not been sufficiently treated, I have communicated with him by mail, and find that he keeps a supply of chaparro amargosa on hand, and when his trouble begins he treats himself, leaving off the treatment when his symptoms have subsided So far as can be determined, all the other patients, including the patient in Case 10, have remained well for from two to four years

Other patients have been treated, and the results have been no less satisfactory The present brief report has to do with the results obtained in a single case, it seems worth while to put this case on record in that emetin (alkaloid) administered hypodermically every day for five months had not altered the course of the disease The emetin used was obtained from several different sources, and was prepared by two or three drug firms, so that its potency can be taken for granted The effect of chaparro amargosa in this case was not so immediate or so magical as that brought about in most of the other cases, but the improvement has been sufficiently rapid to justify the belief that the excessively chronic and obdurate cases of amebic dysentery can be controlled by the use of chaparro amargosa

REPORT OF CASE

History—W D, an unmarried man of 56 of previous good health, developed diarrhea in April, 1914, eighteen months before he was seen A few weeks later dysentery with the passage of a great deal of blood and mucus began The frequency of the bowel movements has varied from five to thirty times in twenty-four hours, and at no time since the onset have the bowels moved less than five times Abdominal pain, tenesmus, vomiting, slight fever, weakness and general malaise have been accompanying symptoms The appetite has been fair at times and again it has been very poor The patient's weight has decreased from 205 to 148

During the first year, various remedies were used In March, 1915, emetin was begun and was given hypodermically in one-half grain doses every day till the latter part of July From August 1 to October 1 other drugs, including quinin by rectum, were tried From October 1 to November 10, emetin was again used, 1 grain being given every other day The patient came to me Nov 11, 1915, the day after his last dose of emetin At that time the bowels were moving from fifteen to twenty times a day

Physical Examination—The loss of weight was obvious The skin was flabby and the mucous membranes pale General examination was negative In the left iliac fossa the sigmoid was palpable as a tender elongated mass A stool passed in the office was practically pure mucus and blood, and contained many active organisms of *Endamoeba histolytica* and *Cercomonas intestinalis* A striking characteristic of the stool was the extreme tenacity of the mucus, it was possible to raise the entire stool on an ordinary toothpick

Treatment and Course—After a preliminary dose of Epsom salt, a glass of fresh infusion of chaparro amargosa was given by mouth four times a day and a quart of the same infusion was introduced into the rectum in the knee-chest posture once a day For three or four days improvement was only slight At this time I noticed under the microscope that all unattached amebas in a particle of stool, to which the infusion had been added, were killed, while those embedded in the tenacious mucus were still active With the idea of removing as much of this mucus as possible from the intestine, a preliminary rectal irrigation of sodium bicarbonate, 1 ounce to the quart, was used, after this was expelled the usual injection was made Under this plan blood and mucus no longer passed, but the patient continued to have from three to five soft movements a day Calomel, one-tenth grain, was given every hour for ten hours after the method of Freund, and continued for several days, the bowels moved from one to three times a day, assumed a semisolid consistency and no longer contained the cercomonas At the end of ten days the patient felt quite well, his appetite was ravenous, he could eat anything, he was having from one to three semisolid bowel movements a day, he had gained 10 pounds in weight and had improved in every way He was seen a month later and his improvement had continued, despite the development of a very large ischiorectal abscess, bowel movements were normal in frequency and consistency

COMMENT

I appreciate that it would be easy to criticize the dosage and particularly the duration of emetin treatment in this case and to suggest that no conjunctive amebicidal irrigations were used The fact apparently is that this case would not have responded to emetin if its administration had been differently carried out Obstinate cases have been reported, for instance, Low[3] as late as November, 1915, wrote

> Though practically all cases of amebic dysentery respond quickly to emetin treatment, there is a small residuum—in which there has been no doubt of the correctness of the diagnosis — which does not, symptoms continuing and amebas, vegetative and cystic, being still found in the stools Such cases require further careful study to explain this anomaly

No one who knows how prone this disease is to recur would be willing to contend that in the case here reported the patient is permanently cured All that one can say is that he is clinically cured and that no amebas, vegetative or cystic, can be found in the stools

My own experience with emetin has been quite limited, in no case of amebic dysentery have I felt the need of it Chaparro amargosa, on the contrary, I have used repeatedly, and its effect has been unfailing At the present time when the price of drugs is almost prohibitive and with prospects for still greater increases, it is pertinent to state that the supply of chaparro amargosa is well nigh inexhaustible

205 Hicks Building

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[1] Nixon, P I Chaparro Amargosa in the Treatment of Amebic Dysentery, The Journal A M A, May 16, 1914, p 1530, id, Am Jour Trop Dis and Prev Med, 1915, ii, 572

[2] Nixon, P I Chaparro Amargosa in the Treatment of Amebic Dysentery, Am Jour, Trop Dis and Prev Med, 1915, ii, 572

[3] Low, G C The Treatment of Amebic Dysentery, Brit Med Jour, Nov 13, 1915, p 714

FOOT-AND-MOUTH DISEASE IN MAN

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Although foot-and-mouth disease, or aphthae epizooticae, has been recognized in continental Europe for more than two centuries, it is only within the past few decades that the malady has attracted attention in this country The disorder is an extremely infectious one Clinically, it may be grouped with the acute exanthemas, although the eruption is seldom of generalized distribution One attack confers only limited immunity, and the disease may recur within as short a period as ten or twelve days[1]

The eruption is vesicular in character and involves the mucous membranes as well as the skin In cloven-footed animals, the mouth and the interdigital spaces are the regions commonly involved The disease is more prevalent in summer than in winter The causative agent has never been isolated, but very probably it is an ultramicroscopic micro-organism which is capable of passing through a Chamberland or Berkefeld filter (Loeffler and Frosch[2], Nocard and Roaux[3]) The lymph contained in the vesicles is extremely virulent, and infection may result from direct contact with a wounded or otherwise pervious surface, or through the medium of contaminated food or bedding According to Hutyra and Marek,[4] stock markets, through trading, play an especially important part in the transmission of the malady

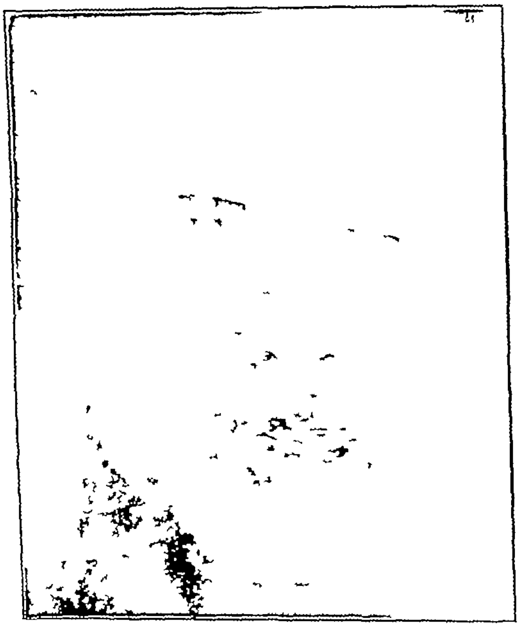

Fig 1—Lesions of lips and conjunctivae on tenth day of disease

Of the various animals attacked, cattle are the most susceptible, then hogs, sheep and goats Horses, dogs and cats occasionally contract the malady Rarely, chickens, pigeons and other fowls are affected[5]

In man the disease is usually acquired through the ingestion of contaminated milk or milk products (butter, cheese, whey, etc) Direct inoculation is of infrequent occurrence As encountered in man, the disease is of comparatively low virulence, although Bertarelli,[6] Schautyr[7] and others have succeeded in inoculating animals with material secured from human subjects As a rule, children are more severely affected than adults In the majority of instances in man the disease takes a mild form, although fatal instances have been recorded as occurring in several of the German epidemics[8]

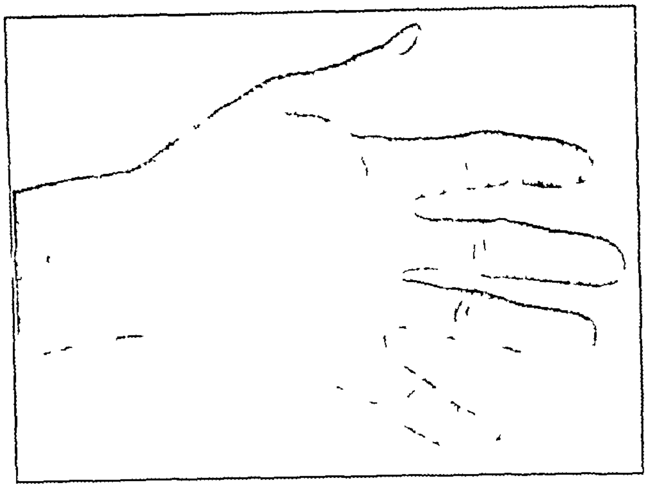

Fig 2—Character and distribution of vesicular and pustular lesions on right hand

The period of incubation varies from two days to two weeks An attack is ushered in with manifestations of moderate constitutional disturbance There may be an associated gastro-intestinal catarrh, particularly in children Following the development of the fever and general malaise, the mouth becomes dry and parched, and the mucous membrane swollen, reddened and glazed In severe cases the palpebral conjunctiva, and the genital mucosa also may be involved In the course of three or four days, superficial vesiculation

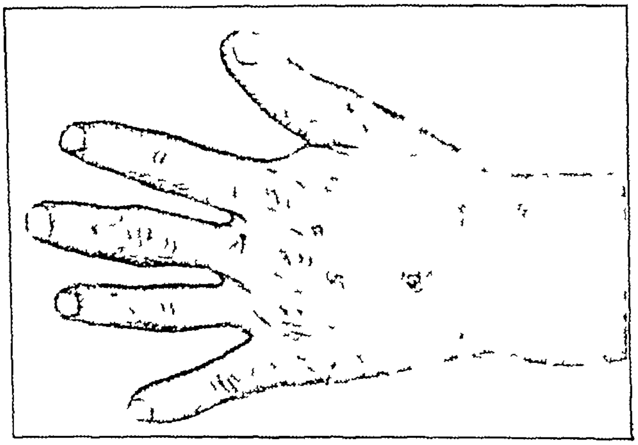

Fig 3—Character and distribution of lesions on left hand

occurs, discrete blisters from the size of a pinhead to that of a pea forming on the affected surfaces In addition to the lesions on the mucous membranes, vesicles frequently appear on the dorsal surface of the hands and feet, and, occasionally, on the nose, face, ears, knees and buttocks The bases of the majority of the lesions are ill defined and reddish or purplish The distribution is roughly symmetric At first the vesicles contain clear lymph, but later, as a result of pyogenic invasion, the fluid becomes yellowish and cloudy In the course of a few days the pustules become inspissated, and finally disappear, leaving no trace The description of the clinical picture has been admirably summarized by Clough[9]

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[1] Kovacs and Mokaldy, cited by Hutyra and Marek (Footnote 4)

[2] Loeffler and Frosch Centralbl f Bakteriol, 1897 xxii 256

[3] Nocard Rev gén de med vet., Toulouse, 1903 i 369

[4] Hutyra and Marek Special Pathology and Therapeutics of the Diseases of Domestic Animals, Am. ed i, 328 translated by Mohler and Eichhorn, Chicago A. Eger, 1914 (a valuable presentation of the subject)

[5] Spinola Handbuch Speciellen Pathologie und Therapie fur Thierarzte 1858, ii 883

[6] Bertarelli Centralbl. f Bakteriol, 1907, xlv 628

[7] Schautyr Arch vet naouk, 1893, ii 87 (cited by Georges Hugot These de Lyon, 1913 who gives a fairly complete bibliography)

[8] Siegel Deutsch med Wchnschr 1891, xvii, 1328

> A mild febrile infectious disease, characterized by the appearance of an erythema and a superficial vesicular eruption over the mucous membrane of the mouth and on the skin of the hands and feet, by salivation, by swelling, burning, and paresthesia of the affected parts, with subsequent desquamation, and by healing of the ulcers without scar formation

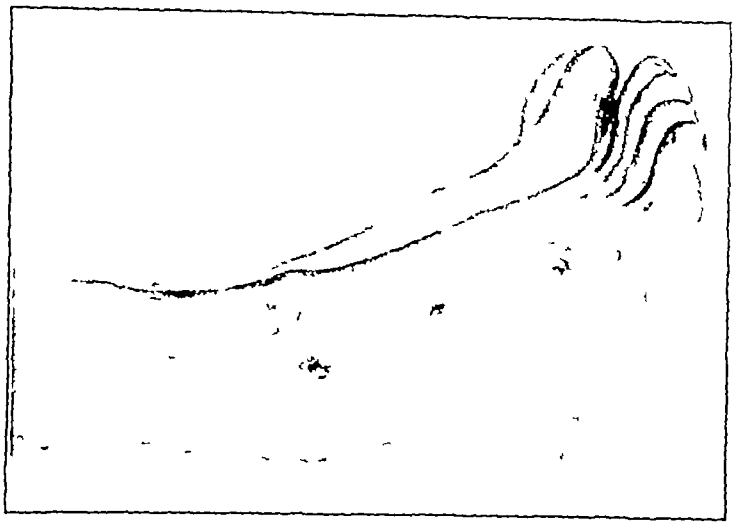
Fig 4 —Character and distribution of lesions on feet and ankles

The following case, clinically indistinguishable from foot-and-mouth disease in man, has recently been under our observation

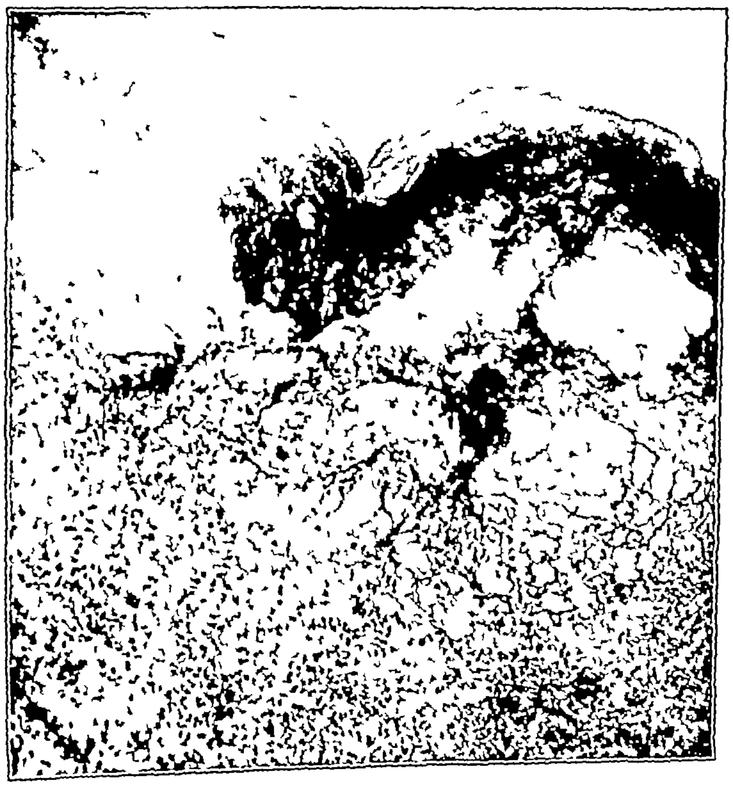
Fig 5 —Section through a vesicle from inner surface of knee, showing parakeratosis, acanthosis, edema and cellular infiltration (moderate magnification)

History—A J, man, white, married, aged 25, farmer and stockman, the cutaneous history of whose family was negative, had always been in good general health Aside from the usual diseases of childhood he had never before experienced a serious illness He resided on a farm, 2 miles south of Ellsworth, Kan During the early fall of 1915 he was engaged in hauling and storing feed for his stock About two weeks prior to the onset of the illness he had assisted in the transfer of small herds of cattle from one pasture to another He had eaten a meal at a restaurant at that time

The present illness began the night of Oct 31, 1915, the attack being ushered in by sensations of chilliness, followed by fever, with slight sore throat, and pain in the muscles of the neck The irritation in the throat was accompanied by a shallow, hacking cough, and increased activity of the salivary glands The case was first seen by one of us (Dr O'Donnell), November 4 At that time the patient appeared fairly well nourished, but ill and haggard He had not slept for two nights on account of the pain in his throat and the profuse salivation, which compelled him to expectorate at intervals of from five to ten minutes His temperature was 101 F, pulse 118, respiration 20 The cough was troublesome, and swallowing was difficult and painful The cervical lymph-nodes were enlarged and tender The tonsils were swollen and congested, the redness extending to both pillars and along the edge of the soft palate The conjunctiva of both eyes was red and injected The tongue was coated, moist, and red along the edges The chest was clear November 6, profuse salivation had developed, so much so that the patient could get very little sleep He was compelled to empty his mouth almost constantly, the inflammatory condition in the throat had extended to the mucous membrane of the soft and hard palate, lips and cheeks The tongue was red and sore. A number of yellowish vesicles were visible on the soft palate, cheeks, the edges of the tongue, and along the vermilion border of the lips November 7, the temperature was 103 4 F That evening it reached 104 F, pulse 120 The eyes were very much congested and inflamed, purulent secretions gummed the edges of the lids together, and had to be washed off frequently In this region the process was at its height between the tenth and twelfth days The patient's sight was so blurred that it was difficult for him to distinguish objects across the room Lesions first appeared on the dorsal surface of the hands and feet, November 9 A few hours later the knees and buttocks also were slightly involved, and a few vesicles developed on the ears, and one near the meatus The development of the cutaneous eruption was accompanied by tingling and burning of the parts This was followed by the formation of reddish macules, many of which later became the sites of thick-walled vesicles from the size of a pinhead to that of a pea, with purplish areolae In the course of from twenty four to seventy-two hours, the lesions became pustular, and finally either underwent desiccation, or sloughed, leaving red, raw surfaces which healed quite readily, and without scarring, in the course of about three weeks Aside from the regions mentioned, no other areas were involved The cutaneous manifestations in some respects simulated those of a severe example of erythema multiforme of the iris type, but the lesions were smaller, and the affected parts so deeply congested as to be purplish Following the appearance of the vesicles, the subjective symptoms became trivial in character There were no accompanying joint pains, such as have been noted as occurring in many instances of foot and mouth disease For laboratory study, a small but mature vesicle was excised, under local anesthesia, from the inner surface of the right knee A number of tubes of culture mediums of various kinds were inoculated from the contents of new and old vesicles and pustules, and also with the slimy, stringy mucus which fairly poured from the patient's mouth. Owing to the difficulty experienced in securing a calf for experimental inoculation, a small but well nourished kitten was substituted.

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[9] Clough Bull Johns Hopkins Hosp, 1915, xxvi, 351

The excised tissue was fixed in liquor formaldehydi, and later sectioned in a freezing microtome, and stained with hematoxylin-eosin.

Pathology.—The corneous layer was thickened and parakeratotic. The stratum lucidum was increased in depth, and, as a result of the large amount of fluid which was present throughout the epidermis, appeared spongy and ill defined. The rete cells were increased in size as well as in number. The majority contained more or less fluid. Many had lost their nuclei, and in a few instances these elements were replaced by nonstaining vacuoles. The vesicle was situated in the lowermost layers of the rete. Its cavity was irregular in outline, and ragged septa served to partially divide and subdivide it into numerous compartments of various shapes and sizes. The structural changes characteristic of varioloform lesions were entirely lacking. The basal cell layer was practically obliterated. In this region also many of the nuclei had completely disappeared. The interpapillary plugs were indistinctly outlined, or altogether wanting. The entire prickle layer was spongy and edematous, and the seat of widespread fibrinous and leukocytic infiltration. No red cells were present. The infiltrative changes were most pronounced in the papillary region. Here the blood vessels and lymphatics were widely dilated, and perivascular infiltration (mostly of the small round-cell type) was a prominent feature. In the subpapillary layer the collagen bundles exhibited signs of compression, and the vascular changes were much less pronounced in character, although there was profuse round-cell infiltration in the vicinity of the coil gland ducts. Aside from the various types of staphylococci commonly found in the skin, the only organism worthy of note recovered from the lesions was a hemolytic streptococcus, which is at present being exhaustively studied by Dr. D. C. Smith. The kitten was placed in charge of Drs. Kinsey and Trickett, of the Kansas City Veterinary College, and kept under observation for several weeks. It appeared quite ill for about twenty-four hours, but no lesions of the skin or mucous membranes were observed at any time.

It is extremely unfortunate that we did not communicate the suspected character of the disorder directly to the officials of the U. S. Department of Agriculture. Had this been done, experimental inoculations could have been carried out on a much more extensive scale.

We are indebted to Dr. S. J. Crumbine of Topeka for valuable assistance and advice, and to Dr. Frank J. Hall of this city for aid in pathologic work.

A Chimera.—What a chimera is man! what a confused chaos! what a subject of contradiction! a professed judge of all things, yet a feeble worm of the earth! the great depository and guardian of truth, yet a mere huddle of uncertainty! the glory and the scandal of the universe!—Pascal

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RADIUM IN THE TREATMENT OF LYMPHANGIOMA CIRCUMSCRIPTUM

REPORT OF A CASE

FRANK E. SIMPSON, M.D.
CHICAGO

History.—L. L., woman, aged 21, first came under my observation at the Cook County Hospital in April, 1914. She presented a tumor of the skin involving principally the right buttock and the inner surface of the right thigh and covering an irregular surface measuring approximately 8 by 15 centimeters.

The tumor had been present since her earliest recollection. It was composed principally of irregularly grouped wartlike projections more than a centimeter high at the most elevated parts and of a dirty yellowish color.

On close inspection, the tumor was seen to be composed of innumerable thick-walled vesicles on which had developed in places a thickened hyperkeratotic epithelium giving the wartlike appearance noted before. Parts of the tumor, however, were more flat and were bluish black, being evidently made up of blood vessels. Lying beyond the main portion of the growth were many discrete, thick walled, yellowish vesicles containing clear serum. When these were pricked a clear serous oozing took place which sometimes lasted for hours.

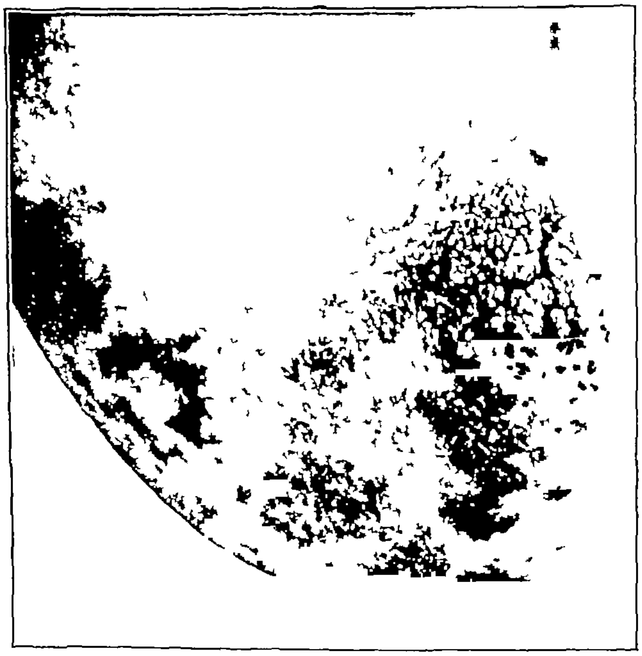

Fig. 1.—Lymphangioma circumscriptum of right buttock and inner surface of right thigh, April, 1914; patient in lithotomy position.

From between the verrucous projections which composed the bulk of the growth a serous oozing occurred at times spontaneously, this being one of the symptoms for which relief had been sought.

Occasionally a few new vesicles had appeared at the periphery, persisting so that a considerable increase in the size of the growth since childhood had been noticed.

The clinical diagnosis was lymphangioma circumscriptum (lymphangiectodes, T. and C. Fox) and hemangioma. For microscopic study a small vesicle was excised, sectioned and stained with hematoxylin and eosin and with polychrome methylene blue.

Dr. B. Barker Beeson has kindly furnished me with the following notes made from a study of the sections:

Microscopic Examination.—Epidermis: The stratum corneum is somewhat thickened in places but no evidences of parakeratosis are present. The granular layer is also slightly increased in size. A marked acanthosis or proliferation of the rete malpighii is a prominent feature, and, plus the hyperkeratosis, gives to the section a verrucous appearance. Throughout, the basal layer is normal.

Corium: In the papillary and subpapillary layers one finds dilatation of the lymphatics and blood vessels, the former being especially well marked. A round-cell infiltrate surrounds the blood vessels. The number of connective tissue cells is also somewhat increased. Here and there near the dilated lymphatics, scattered mast cells are to be seen.

That the tumor would yield to radium was expected from the success already obtained in the treatment of many pure angiomas of the skin and from my observations of the general effects of this agent on the skin and other tissues.

When I first undertook the treatment, in April, 1914, the effect of radium on tumors of this type had not to my knowledge been studied Even earlier than this, however, Dr Robert Abbe[1] of New York had begun the treatment of lymphangiomas with radium, and in August, 1915, he published an account of the results obtained in four lymphangiomas of the tongue and two of the skin

These are apparently the first cases of this type recorded in which radium was used

The success following radium treatment is so striking that a brief account of the technic which I employed may be of interest

Treatment —The most prominent part of the tumor was attacked first Radium varnish applicators of one-quarter strength were usually employed Four applicators of this type covering an area of 16 sq cm were applied unscreened for a period of one hour a day on four successive days A series of four similar courses about four to six weeks apart sufficed to level the surface of the most prominent portions of the growth As the tumor decreased in height the treatments consisted of an hourly seance each day (0 1 mm lead screens being used over the face of the applicators) for five successive days Two series of treatments of this sort at intervals of six weeks sufficed to cause complete retrogression of the growth

In the less infiltrated parts a linen "toile" (one-twentieth strength) was sometimes used With this applicator screened with 1/100 aluminum a series of applications of an hour each day on five successive days, repeated four times, at intervals of about six weeks, sufficed for decolorizing and removing these areas

The treatment was carried out more or less irregularly for various reasons, but the reduction of the growth, the alleviation of all symptoms and a good cosmetic appearance were obtained rather easily

CONCLUSION

In view of the difficulty which is frequently experienced with other methods of treatment, the use of radium in these rare and interesting cases would seem to be the method of election

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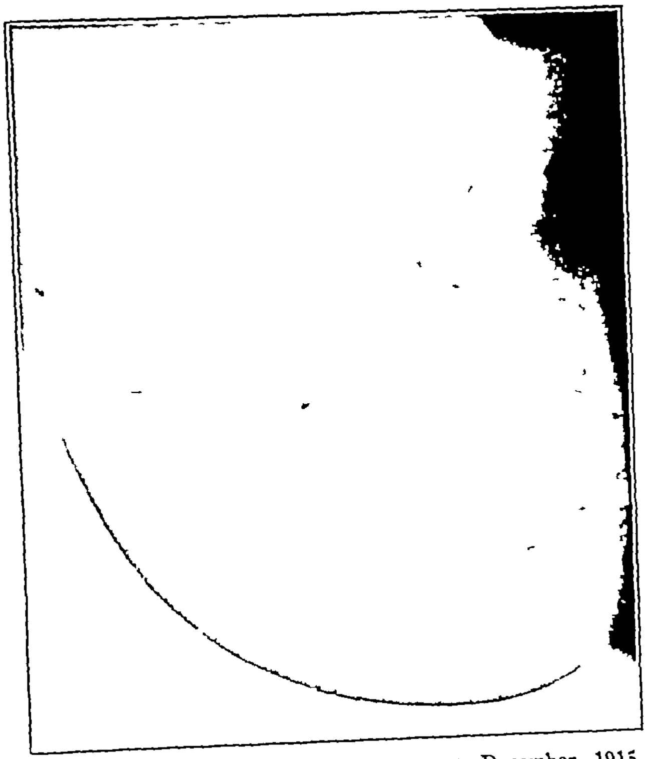

Fig 2 —Same case after radium treatment, December, 1915

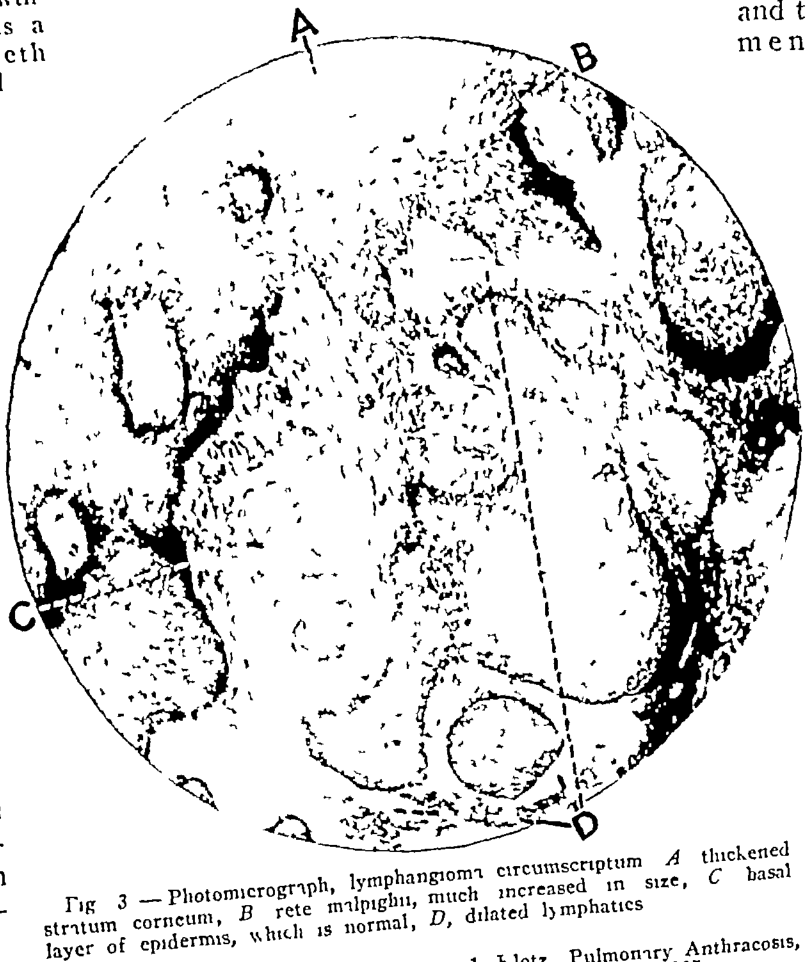

Fig 3 —Photomicrograph, lymphangioma circumscriptum A thickened stratum corneum, B rete malpighii, much increased in size, C basal layer of epidermis, which is normal, D, dilated lymphatics

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[1] Abbe, Robert Lymphangioma and Radium, Med Rec, New York, 1915, lxxxviii, 215

A METHOD FOR GRAPHIC DEMONSTRATION OF THE FOREIGN INORGANIC MATTER AND CARBON IN THE LUNGS*

EDWIN F HIRSCH, PH D, M D
CHICAGO

Coal dust pigmentation of the lungs has been given considerable study recently by Klotz,[1] whose review of the literature bearing on the subject contains most of the information available to date It is not necessary, therefore, to take up such a review here, and this communication deals simply with a presentation of results obtained in the analysis of several lungs removed during necropsies performed on persons dying in the Cook County Hospital, Chicago, with also a method for displaying the results of these analyses mounted with one of the corresponding lungs In addition to a quantitative estimation of the carbon, similar determinations were made of the calcium and silica content of the lungs The object of the work was to get a definite idea of the amounts of soot present in lungs showing different degrees of anthracosis as observed at necropsy, and to prepare museum specimens showing graphically just how much foreign material there is in the ordinary city dweller's lungs

The following method of analysis was used The left lung was preserved as a museum specimen, while the right lung and the parabronchial lymph glands were ground up, weighed, and the dry weight determined after the tissues had been well desiccated The dried tissues then were pulverized in a small coffee mill, and on this finely ground material all analyses were made in duplicate The coal dust was estimated colorimetrically[2] by comparing known quantities of toluene soot finely divided and suspended in liquid petrolatum, with the black residue obtained by digesting 1 gm of dried lung tissue with antiformin until the organic material largely had been removed, and this then likewise finely divided and suspended in 10 c c of the colorless liquid petrolatum Following the digestion of the tissue with antiformin, the coal dust was thrown down by centrifuging in the usual way, washing with acid alcohol, then ether, and finally transferring the residue to a glass mortar with a little ether, this being evaporated over a steam bath The carbon residue was finely divided in a glass mortar, and suspended in the 10 c c of liquid petrolatum The calcium and silica were determined gravimetrically according to a method outlined by Hans Aron[3]

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* From the Department of Pathology, University of Chicago, and the Otho S A Sprague Memorial Institute

[1] Klotz Pulmonary Anthracosis, A Community Disease, Am Jour Pub Health, 1910 ii, 887

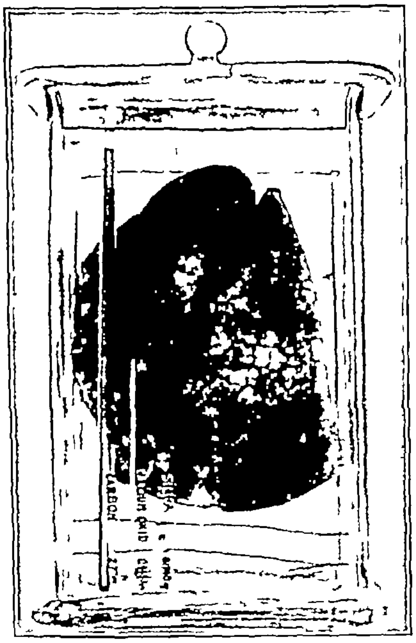
[2] Liefmann Ueber den Nachweiss von Russ in der Luft, Habilitationschrift, Halle, 1907

The results of these analyses are given in the accompanying table

McCrae,[4] after reviewing the data concerning the silica content of lungs, presents analyses of seven lungs, six of which were silicotic and had been removed from the cadavers of miners, the other having been taken from the body of a native Zulu, and considered normal The percentage of silica in the dried lung tissues varied between 0 73 in the normal to 4 47 in one of the silicotic lungs The percentage figures obtained in my tabulated analyses are below the one (0 73) considered as normal by McCrae This, however, is of no great significance, for from the fact that the infant's lungs contain no silica, and that probably all of the silica which accumulates in the lung tissues comes from the exterior, as McCrae suggested, the silica content of a lung would be determined by the duration of exposure to an atmosphere and the amount of silica contained in it The same relation holds true so far as the carbon content of the lungs is concerned, for carbon is recognized equally well as being of extraneous origin This conclusion has developed from Boer's[5] quantitative determination of carbon in the lungs of individuals at various stages of life He observed no darkening of the solution when the lungs of small children and fetuses were digested with antiformin He states, further, that the nature of the individual's occupation naturally exerts a great influence on the amount of coal dust inhaled and deposited in the lungs Chimney sweepers and coal heavers must necessarily inhale more carbon particles than a sheep herder on some remote hillside In the right and left lungs of a chimney sweep, Boer found, respectively, 8 and 5 gm of coal dust measured colorimetrically in terms of naphthalene soot Klotz determined the carbon content of several lungs gravimetrically, 0 145 gm for the right lung being his lowest estimation This lung was removed from the body of the storekeeper (aged 47) at a necropsy performed at Ann Arbor, Mich This figure should be compared with 5 3 gm, determined in the left lung of a pedler, aged 28, at a necropsy performed in Pittsburgh The minimum and maximum amounts in my analyses are, respectively, 0 19 and 2 72 gm, both estimations being for the right lung, and in all probability being typical for persons living in Chicago with occupations which do not expose them particularly to coal dust

RESULTS OF ANALYSES

	Lung			
	1	2	3	4
Moist weight, gm	365	284	427	438
Dry weight, gm	80	70	96	78
Percentage of dry weight	21 92	24 65	22 48	17 81
Moisture percentage of moist weight	78 08	75 35	77 52	82 19
Ash, gm	5 441	2 710	4 760	3 182
Ash percentage of dry weight	6 80	3 86	4 95	4 08
Foreign carbon, gm	2 72	0 71	1 20	0 19
Carbon percentage of dry weight	3 40	1 01	1 25	0 21
Silica, gm	0 1748	0 2757	0 6895	0 0361
Silica percentage of dry weight	0 21	0 39	0 72	0 01
Calcium oxid, gm	0 4483	0 1180	0 0170	0 0545
Calcium oxid percentage of dry weight	0 56	0 17	0 02	0 07



Specimen demonstrating the amount of coal pigment and inorganic matter in an average city lung The amount of pigmentation in the lung will be seen to be not more than is commonly found in persons living to adult years in smoky cities In the tubes are shown the amount of foreign matter actually found in the companion lung and lymph glands carbon as soot 2 72 gm calcium oxid, 0 4483 gm silica 0 1748 gm

To illustrate objectively the amounts of carbon determined in the lung tissues, pieces of glass tubing, uniform in caliber, and sealed at one end were filled with weighed amounts of toluene soot corresponding to the determinations The soot was pressed down firmly, and the tubes made comparative by making the column height directly proportional to the quantity of soot A small cotton plug was firmly packed into the tube, and the open end sealed In a similar way, equivalent quantities of calcium oxid were mounted, while for the silica, "kieselguhr" was used These tubes with the proper left lung were mounted on a glass frame and placed in a large museum jar in a manner similar to the usual method for displaying preserved specimens Such specimens should be of value in public health demonstrations, or similar exhibitions

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The Real Object of Hygiene—Is it [hygiene] purely for the sake of the physical and mental health which will result? Is a pig in a clean pigpen any less a pig? Is the fullest meaning of constructive health work to be found in its social, political and ethical interpretation, or does it have an even more fundamental significance? Is it not true that a healthy individual and a healthy society are the only adequate means or instruments through which may come a more perfect expression of the conscious life in the universe? The public health is not only inevitably tangled in the problems of economic readjustment and of social growth, but it is of intimate significance to both individual and social spiritual evolution The health of the people, the physical and mental welfare of the nation and of the world are essential to the higher manifestation of conscious life, the Elan Vital, striving for a more perfect expression through the medium of human kind —Donald B Armstrong, M D, *American Journal of Public Health*, December, 1915

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[3] Aron Hans in Abderhalden Handbuch der biochemischen Arbeitsmethoden 1910 i 401

[4] McCrae J The Ash of Silicotic Lungs South African Institute for Medical Research 1913

[5] Boer W Ueber quantitative Bestimmung des anthrakotischen Lungenpigments Arch f Hyg 1911 lxxiv 973

SINUS THROMBOSIS IN COMPRESSION *

CECIL E REYNOLDS, M R C S, L R C P, D P H
LOS ANGELES

There are naturally many reasons why all cases of cerebral compression should be relieved as early as possible But in cases of acute pressure on the surface of the brain of a simple nonseptic and nonmalignant character, it was at one time my cherished belief that, provided the pressure was relieved and the cause removed before the vital centers were on the verge of complete paralysis, or the vasomotor center near to the end of its secondary depression and sepsis was excluded, the patient would recover with at worst some softening of the area locally affected, and perhaps some damage to the retina, unless an aspiration pneumonia supervened I was soon removed from a state of complacency, however, by encountering cases in which another complication confronted me, and about which I have so far been unable to find mention in the literature as one of the results of simple aseptic acute compression I refer to thrombosis by stasis of the cerebral sinuses

It is true that Virchow's name has long been attached to a stagnatory thrombosis known as the "marasmic or marantic clot," but in the cases I am about to describe, the individuals were exceptionally robust, and of the three main causes of thrombosis, to wit, sepsis, damage to vessel wall, and stasis, only the latter was discoverable to account for the fatal termination It still remains, therefore, for some one to observe and formulate an average duration and degree of compression likely to produce an irremediable thrombosis

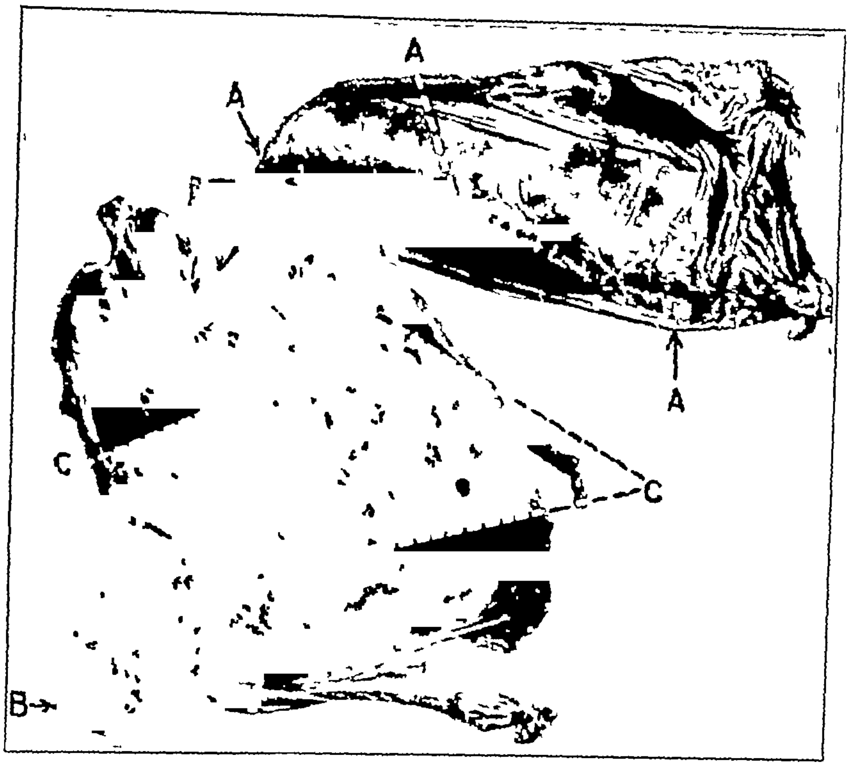

Fig 1—Piece of dura mater (Case 1) partly covered with remains of clot A, A, superior longitudinal sinus, firmly thrombosed, B, posterior end of clot, C C, remains of clot

REPORT OF CASES

Case 1—A schoolgirl, aged 9, Dec 4, 1914, at 4 30 p m, was sitting on the back seat of a jitney bus, when a larger automobile collided with the bus, and the child's head came in contact with the shoulder of her aunt sitting beside her The child complained of some headache at the time, but left the jitney and walked to a cafeteria, but she was too nauseated to eat and later vomited on the street A druggist gave her acetylsalicylic acid (aspirin), and another druggist gave her something for a sick stomach, thereby showing more ability for commerce than for inquiry and foresight When the patient arrived home at 5 45, she vomited again and was very drowsy

At 6 30 o'clock she was almost speechless and soon become unconscious, vomiting watery bile at intervals At 8 o'clock she could not be roused At 10 o'clock convulsions set in in which the legs were drawn up and the arms and hands were pronated and flexed at the elbows and wrists, the head drawn back and the eyes deviated to the right, according to a practical nurse who was now in attendance These convulsions occurred about every twenty minutes throughout the night

I was called to the case for the first time next morning, December 5, at 8 45 The patient was then profoundly comatose, and the face and neck were swollen All the limbs were flaccid, the pulse was 58, of poor volume, the temperature was 100, the respiration was of the Cheyne-Stokes type, and there was slight cyanosis The eyes looked straight ahead and were glassy, the right pupil dilated three-fourths, the left contracted, no eyeball movements, no reflexes, visual axes parallel The scalp was not bruised, but felt a little puffy over the region of the right temple I operated at once with novocain The usual subtemporal flap was turned down, and when the fibers of the temporal muscle were separated, it was found to be engorged and bled freely On removal of the bone in the anterior temporal region, a black coagulated extradural clot was revealed It required as large a defect in the bone as is indicated in Figure 2 to remove all of the clot and to secure the meningeal artery, which was lying free in the clot and was so friable that I had to pursue it almost to the foramen spinosum During removal of the clot, respiration suddenly ceased with a serious fall of blood pressure, but the child was revived after fifteen minutes with the pulmotor After being cleansed, the dura was incised, and edema fluid spurted out under pressure, but was quite clear The brain was anemic The dura was sutured with silk, the wound closed and a drain passed down to the dura The patient was returned to bed pulseless, but soon rallied under restorative measures, especially a rectal drip of strong tea From that time onward until she died, December 12, a week after the operation, there was most hopeful improvement physically, but consciousness was never fully restored

The observation of the various reflexes was most interesting, but a detailed report of them is outside the scope of this paper I may say, however, that the "Marie Foix reflex" was present soon after the operation December 7, there was a brisk double Babinski, but the knee-jerks remained absent The eyeballs moved from side to side, but the right eye at this time did not move beyond the middle line Dr Frank Miller found the edge of the right disk a little blurred December 8, the right pupil began to contract up to normal, and the patient was able to cough up mucus The triceps jerks reappeared There was no rigidity

December 9, purposive movements were executed, and the pupils reacted to light

December 10, the knee jerks returned slightly The Babinski was still brisk Both eyes deviated, mostly to the right, but once or twice returned to the left The axillary reflex was marked, and compression of the hands produced extreme pronation Later the child was crying Edema of the right eye was increasing

December 11, crying was more frequent

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* Read before the Los Angeles County Medical Society, Feb 3, 1916

December 12, 6 a m, the right pupil was again dilated, 9 a m, cyanosis commenced, 6 p m, patient died The left pupil was dilated, the right pupil now contracted

I observed one reflex that was new to me during the seven days after the operation in that light pressure forward on the angle of the jaw caused a marked downward retraction of the corner of the mouth on the left, that is, the paretic side

The necropsy revealed no meningitis or other cause for persisting unconsciousness, except the thrombosis of the longitudinal sinus and veins leading to it Moreover, I believe that the thrombosis was due in the first place to the length of time the pressure had existed The clot had no tendency to soften, but I have no doubt that infection occurred later from the nose

There was no fracture of the skull The middle meningeal artery was severed by the sharp edge of the anterior border of the squamous temporal springing inward from its articulation with the great wing of the sphenoid over which the artery passes, and after severing the arteries it sprang into place We found this articulation quite movable The child in this case had previously enjoyed perfect health

CASE 2—August 11 Mr C, aged 31, had felt unwell after taking a long walk in the sun He later had frontal headache and some cough, also he vomited He had in the past been a heavy drinker, but had not been drinking on this occasion August 12, he rapidly became unconscious, and his physician found that he had a pulse of 80 and a normal temperature, but could not determine any paralysis I was called to see him in the afternoon of August 13, after he had been unconscious for fourteen hours I found him deeply comatose with stertorus breathing and all limbs flaccid I could not determine by the Marie Foix test whether one side was more paralyzed than the other, but the eyes deviated to the right with a jerking nystagmoid movement We removed him to the Angelus Hospital and I operated immediately The coma was so profound that no anesthetic was used On removing the bone over the right middle frontal lobe, I found an extensive subarachnoid hemorrhage, but *in addition a great excess of* intracerebral pressure. Some of the blood had caked on the surface of the brain, and since there was no sign of returning consciousness after relief of the pressure, I decided that the case was hopeless The man died several hours later At the necropsy we found in addition to the cortical hemorrhage a firm thrombosis of the right lateral sinus, extending into the torcula and involving the straight sinus—generally a hopeless condition

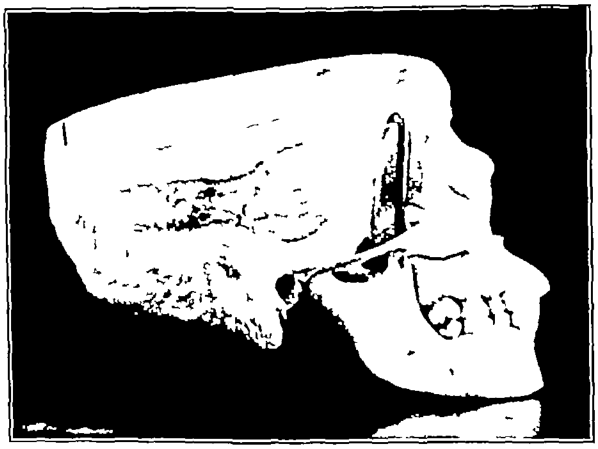

Fig 2 —The darkened area shows the amount of bone removed in order to evacuate the clot

There was no sign of ear, bone, nose, or scalp disease, neither had there been any symptoms referable to sinus thrombosis prior to the onset of the coma Taken in conjunction with the fact that the temperature had been normal, and that the extravasated blood on the cortex was caked, I think it is fair to conclude that the hemorrhage was the primary lesion, and that the sinus thrombosis was the result of the prolonged *pressure, as in Case 1*

COMMENT

It is, of course, well recognized that venous stasis is about the earliest effect of cerebral compression, but it is also recognized that stasis, pure and simple, is a rare cause of thrombosis in healthy young individuals, and since I have been unable to find mention of it as a possible early result of compression, I have felt that the citation of these cases may help by adding a drop to the bucket of pleas in favor of early decompression in well established cases irrespective of their cause or localization I can look back, during the past twelve years, to sins of omission in my own practice, and I realize now that only the hand of custom and relics of antiquity prevented me from relieving, by surgery, cases of spontaneous cerebral hemorrhage that I would not have hesitated to operate on had they been traumatic Of course, in Case 1, I am at a loss to understand why I, or some other surgeon, was not called on earlier, but Case 2 is illustrative of the rule that a doctor who would never dream of temporizing over a placenta praevia will, too often, suffer an unconsciousness of spontaneous origin to remain unlinked in his mind with surgical effort, and when confronted with a coma of spontaneous origin, there is thrown on the screen of his consciousness the series drugs, epilepsy, uremia, and then in the apoplectic series there will occur to his mind "ice-caps, catheters, calomel and coffins" However, before surgery is employed, an accurate diagnosis of pressure is essential, for I have seen the most profound hemiplegias and comas from nothing worse than an angiospasm, and it would be unfortunate to have a patient sit up in the sudden way in which they do when recovering from an angiospastic coma during the course of an operation

Given an increasing pressure, however, I am sure that any of us would rather immediately risk a piece of temporal bone than any cerebral function with the added risk of a fatal thrombosis

I think, at least, that I have been able to show that the venous sinuses are less fool proof than are the medullary mechanisms, and far less recoverable

Blood may find its way again into the compressed terminal arterioles of the cortex, but it is asking too much to expect an extensive thrombosis of the cerebral veins to be absorbed when the sinuses are also plugged

506 Exchange Building

Registration of Births—The establishment of community records, such as those resulting from the registration of births, is one of the first evidences that a community expects to have some degree of permanency and the inhabitants do not consider themselves as temporary residents This was as true of the Greek and Roman civilization as of our own The necessity for the registration of births is felt in many of the activities of the modern state or city The uses of registration are legal and social It also may serve an important function in public health administration Official knowledge of every death and its cause is necessary in the interest of law, order and personal safety Crime is likely to be more common where no official cognizance is taken of the disposal of bodies For this reason the need for the official registration of deaths is felt by a community and enforced at an earlier stage in its development than is the registration of births—J W Trask, *Public Health Reports* Jan 14, 1916

INTRACRANIAL AEROCELE*

E. H. SKINNER, M.D., KANSAS CITY, MO.

Shadows of a cavity containing air or gas within the cranium were seen on Roentgen negatives of a skull that had been fractured in an explosion of a gas well. The patient (Case 5454), referred, June 27, 1914, by Dr. H. E. Pearse of Kansas City and Dr. F. H. Morton of Okmulgee, Okla., had sustained a fracture of the right supra-orbital ridge of the skull in a gas well explosion four weeks previously. There was a healed scar over the right eye. The patient apparently had recovered, but complained of severe persistent headaches and dizziness.

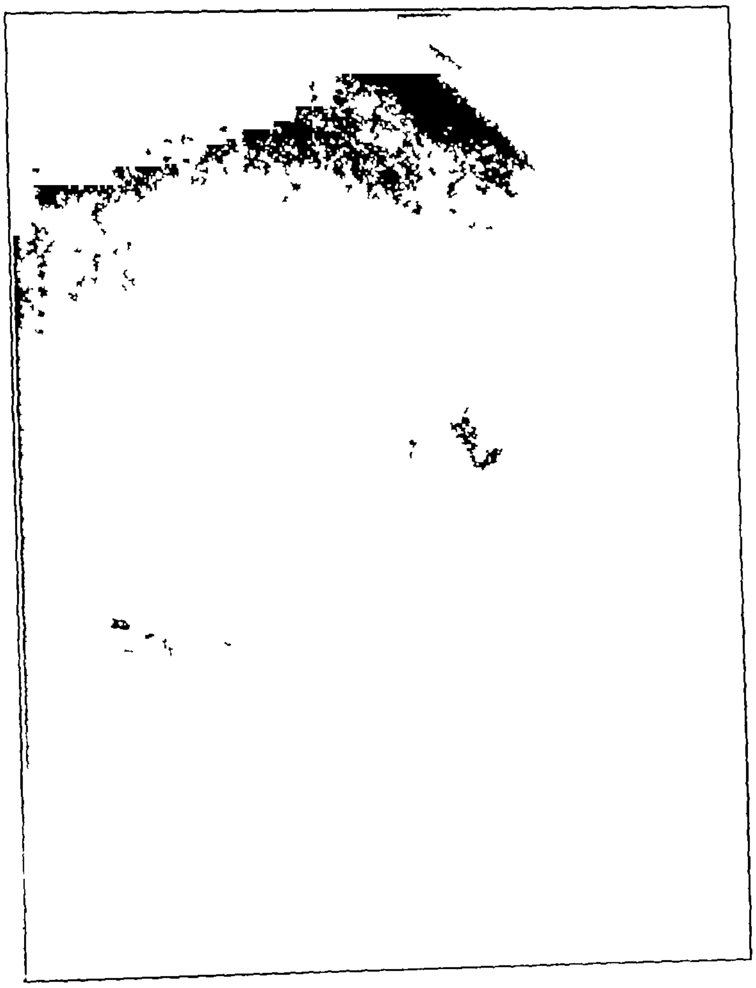

Fig. 1.—Lateral view showing the transparent aerocele in the anterior part of the cranial cavity.

Roentgen negatives taken June 27, 1914, showed a round area of increased transparency in the anterior part of the cranial cavity on the right side. In the lateral view the markings on the inner table of the skull and the diploic channels showed with unusual detail. The stereoscopic Roentgen negatives showed better the fracture of the supra-orbital ridge of the right frontal bone, the comminutions of the fracture extending into and through the posterior wall of the frontal sinus.

The Roentgen findings consisted in a comminuted fracture of the right frontal bone in the frontal sinus area with many irregularly placed fragments, and an air or gas bubble about the size of an egg in the anterior part of the right frontal lobe, which was apparently subdural. The interpretation was that it was a subdural air tumor, because it was a round shadow, and if it had been epidural, the air shadow would probably have conformed to the concavity of the inner table of the skull and depressed the dura, forming an elliptic shadow or meniscus-shaped shadow.

Operation was performed by Dr. H. E. Pearse at St. Luke's Hospital, June 29, 1914. The skull was trephined directly over the air tumor shadow 2 inches above the external angular process of the frontal bone. When the dura was exposed, there was a distinct bulge into the trephined opening with some crepitation and palpatory sense of air beneath. A blunt trocar was prepared with a rubber tube attached, the free end of the rubber tube being inserted into a beaker filled with water which was inverted in a basin of water. The dura was then nicked with a knife and the trocar inserted. Immediately the water was displaced downward in the inverted beaker as it filled with air from the tumor. The bulging dura collapsed. The trephine button was not replaced, but the wound was closed without further surgical venture.

The collected gas was chemically examined by Dr. Roy Cross, who reported as follows:

"Chemical analysis: oxygen, 1.8 per cent.; nitrogen, 98.2 per cent. No ethane, methane or unsaturated hydrocarbons. Air is usually 80 per cent. nitrogen, 20 per cent. oxygen. This gas is practically air from which the oxygen has been absorbed by lymph. Oxygen has about twice the solubility of nitrogen and is infinitely more likely to undergo reduction or chemical reaction and thus be removed than is the case with nitrogen."

The fact that the patient sustained the injury in a gas well explosion prompted the collection of the contents at operation to satisfy the patient, for there was little doubt in the opinion of the surgeon and the roentgenologist that the air had leaked through the dura from the frontal sinus at the site of the fracture. The fact that there was no inflammatory reaction rather dispelled any supposition that the air tumor might have been caused by an infection.

The patient left the hospital in good condition at the end of ten days. Ten days later (twenty days after the operation) the patient developed a severe headache, temperature 104, pulse from 130 to 140, vomited and became unconscious. The pain was on the left side as far back as the ear. The left eye was swollen and edematous. The patient died the following day. Necropsy revealed leptomeningitis with a large amount of pus at the base of the brain.

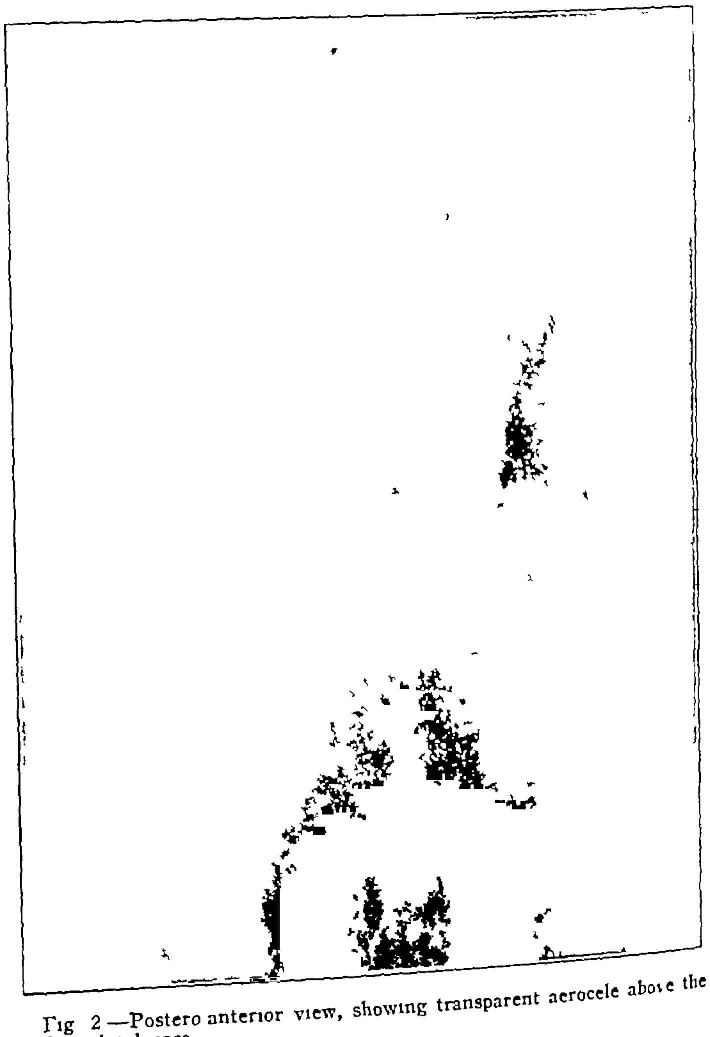

Fig. 2.—Postero-anterior view, showing transparent aerocele above the right orbital area.

1019 Rialto Building.

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* Read before the American Roentgen Ray Society, September, 1914.

Therapeutics

BRACHIAL NEURITIS

Brachial neuritis may be produced by any of the chronic constitutional poisons, such as lead, arsenic alcohol or tobacco, by uric acid disturbances, by altered metabolism of proteins, by insufficiency of the kidneys, and by diabetes It may occur also from straining or injury to the brachial nerves or the brachial plexus Lying on the arm at night frequently produces a brachial neuritis The pain is particularly severe in the neuritis occurring in diabetes, but it may be severe from any cause Pain shooting down the brachial nerves may be due to pressure from neighboring structures, as when there are rudimentary cervical ribs, or a subdeltoid bursitis

The primary treatment depends on the etiology, and as in sciatica and in backache, a complete history should be secured and a careful examination of the patient should be made to determine the predisposing or exciting factor This should be removed if possible When the neuritis is due to some general poisoning, and perhaps always unless the patient is greatly debilitated, purging on several days, or alternate days, with a complete change in the diet, is a beginning treatment that may be valuable Anything that causes pressure or injury to the brachial nerve or the brachial plexus must be removed before treatment will be at all successful Any occupation or use of the arm that perpetuates the trouble must cease

In rheumatic and related conditions, a course of sodium salicylate followed by a course of alkalies in conjunction with a vegetable and cereal diet will often be of rapid benefit

If the pain is so severe as to prevent rest and sleep, the temporary use of narcotics may be necessary, and some hypnotic, as chloral or the bromids, is often advisable, at least for a short time One of the coal-tar products may be of value None of these depressants, however, should be long continued

A patient with brachial neuritis rarely needs to go to bed, if he carries the arm in a sling he will get comfort and rest for the nerve, and have much less pain The sling should support the elbow so that the arm will not drag on the painful muscles At night, or at periods during the day, dry heat, as represented by an electric pad or a hot water bag, is of benefit As in treating any other sore or painful nerve, the region should be kept warm with flannel or cotton Sometimes gentle stroking upward, or massage along the course of the nerve to promote the flow of the lymph in the lymph channels, is soothing and relieves local congestion Later, the arm may be extended and stretched, by the physician, in different directions This stretching of the nerve seems not infrequently to relieve the pain and hasten recovery This may be done daily or every second day for some time Between times the arm should be at rest, until the acute and subacute stages of the inflammation are over

Cataphoresis has many times been recommended for neuritis, and Howell[1] advocates using a 2 per cent sodium salicylate solution or a solution of iodin locally, to be driven into the tissues by electricity, that is, by cataphoresis Of course, the positive electrode with the constant current is made active The negative pole may be placed anywhere on the back According to his method, the arm is prepared by the use of hot air or hot compresses for a period before the ionization is begun, and after the treatment the arm is kept warm by being wrapped in wool or cotton

Dry cupping of the tender nerve, especially as soon as the acute stage is over, is at times of benefit

The high frequency current, either the d'Arsonval or the Oudin form of high frequency, has been recommended for brachial neuritis, and sometimes lessens the pain and is of benefit in hastening recovery The treatment should be applied locally by a glass vacuum electrode, and the electrode should be passed along the whole course of the region of pain for a few minutes at first, and not for more than ten minutes at any one time, at first daily, and later less frequently

In the recurrent deltoid muscle pains, which occur in some persons who have a tendency to malmetabolism of the proteins of meats, this form of high frequency current, or the violet ray bulb, will sometimes temporarily eradicate the pains It may be used on the bare skin or through one layer of clothing, and close enough to spark freely into the muscle It seems to promote resorption of the irritant deposits in the muscle or nerve tissue

Whenever vacuum electrodes are used close to the skin, great care must be taken that burns are not caused If the skin is covered, sometimes the current will be used longer and stronger than is intended, one being better able to observe on the bare skin the effect of the electric current, but after one or two treatments of a person, the susceptibility of his skin to irritation will be recognized, and the dosage and intensity subsequently modified to fit the individual

Active massage is also of benefit in these cases, and the same is true of polarization with the constant or galvanic current for a few minutes, one electrode being indefinite, and the other, generally the negative, being active over the muscle for a few minutes

When all acute symptoms of neuritis have disappeared, or the acute pain and inflammation in a muscle have disappeared, and yet recurrent aches occur, with more or less impaired motility, massage and mechanical vibrations are of value in completing the cure If there is paresis or semiparalysis of one or more muscles, electric treatments are essential, or if the shoulder joint has become more or less impaired in its motion and function by the long continued inactivity, or adhesions have actually formed from the joint not having been properly used, active breaking up of the adhesions must be done If too painful, this may be done rapidly under anesthesia, or less active, but repeated passive motion of this joint must be caused, tending to gain increased motility day by day until the joint becomes normal The patient should also himself daily use the arm to a certain extent and then rest it, if necessary in a sling, for the remainder of the day, until he is able to use the arm for his duties without causing continued pain afterward

Spontaneous Generation—The doctrine of spontaneous generation of life was not only current among the ancients, but we find it persisting through the middle ages, and descending to our own generation In 1542, in his treatise called 'De Subtilitate," we find Cardan asserting that water engenders fishes, and that many animals spring from fermentation Van Helmont gives special instructions for the artificial production of mice and Kircher in his 'Mundus Subterraneus" (chapter De Panspermia Rerum') describes and actually figures certain animals which were produced under his own eyes by the transforming influence of water on fragments of stems from different plants—McFarland

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[1] Howell Practitioner London March 1914

INTRACRANIAL AEROCELE*

E H Skinner, MD, Kansas City, Mo

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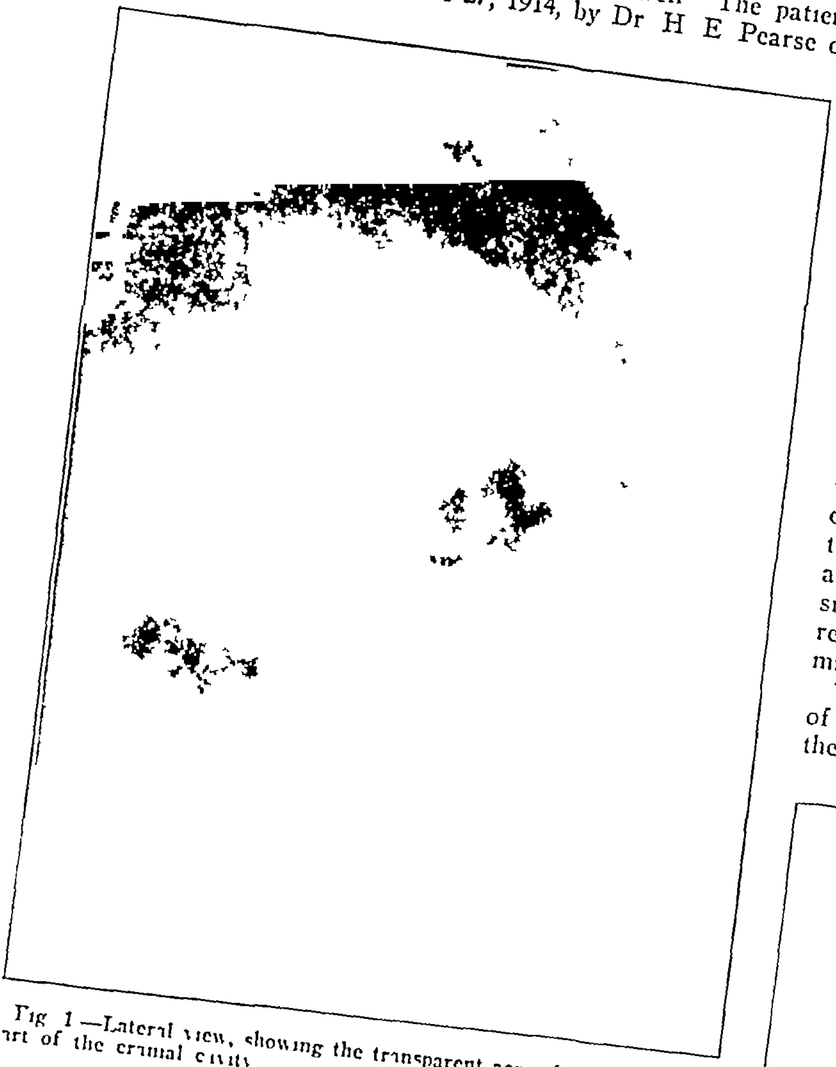

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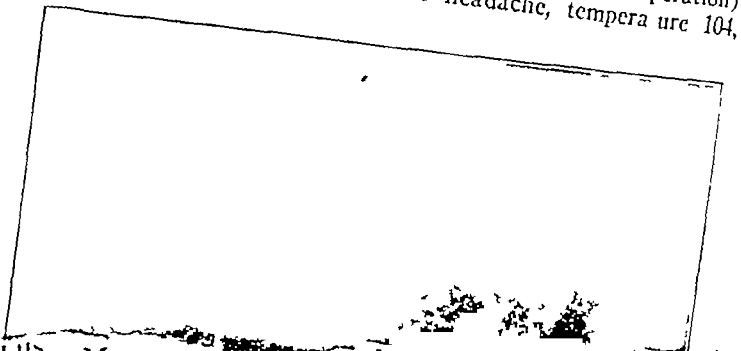

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character of their performances
nervous impulses which come to them, by the variations in the blood supply — the blood pressure and rate of flow as well as the chemical composition of the circulating medium in respect to nutrients oxygen and metabolic waste products A chemical stimulant, or "hormone," discharged from one organ may reach another cell group where it can produce a typical effect independent of every other circulatory or nervous factor Such is the complexity of the physiologic mechanism of cell life

The realization of the almost insuperable difficulty of dealing with these highly complicated situations, in which numerous variables acting at the same moment may obscure the factor of real importance in any phenomenon, has impelled investigators to narrow their fields of observation One result of this has been the introduction of methods for studying isolated organs, pecially when they can be perfused artificially so as
only some of the factors essential for their con-
distin The earlier attempts in this direction
Ray Sole and often failed to imitate
f the circulation Today the
have been perfected to
, rate of flow, composi-

Many, if not most, diuretics act diminishing the osmotic concentration of the blood colloids, others exert a more specific action of some kind, perhaps on the cells of the renal tubules

The diuretic action of caffein may increase the output of urine per unit of time 50 per cent or more Associated with the augmented elimination of water there is an increase in both the organic and inorganic components of the urine This characteristic respon to the presence of caffein has been explained in various ways Some have described it as secondary to an effect on the circulation which must necessarily be an important factor in the production of urine To elaborate on this point would necessitate a review of the modern physiology of urinary secretion A larger number of pharmacologists are at present committed to the belief that the diuretic action of caffein is better explained as a primary stimulation of the renal epithelium, analogous to the behavior of drugs of the cl as irritants to the muscular and nervous tissues T measurement of the oxygen consumption of a gl gives some indication of the nature of the cell p esses, and the fact that, according to Barcroft

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1 Richards, A N and Drinker C K An Apparatus f F fu ion of Isolated Organs, Jour Pharmacol and Exper Ther, xii 467

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There is some evidence that cultures obtained at necropsy in fatal cases usually cause more severe or hot compresses for a period before the ionization is begun, and after the treatment the arm is kept warm by being wrapped in wool or cotton

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When all acute symptoms of neuritis have disap- [illegible] and inflammation in a muscle of infection in a patient suffering [illegible] aches occur, with Streptococci isolated from a chronic suppura[illegible] mechani- variations [illegible] ritis demonstrable clinically, by micro- the prompt or delayed [illegible] cultures in three of the first products The interrelations [illegible] of four animals with the alveolar carbon dioxid tension [illegible] the original hemoglobin in the blood for oxygen, and the [illegible] of bio- of the circulating medium furnish further illustration of phenomena which doubtless often have a common basis, but still demand consideration from a comprehensive point of view

The inability of the kidneys to excrete the *non*-protein nitrogenous constituents which accumulate in the blood in a normal manner represents a pathologic variation which is now readily recognized by the medium of blood analysis Palmer and Henderson[2] have recently shown some interesting correlations of this recognized abnormality with other features of defective renal function In the late stages of chronic nephritis of the glomerular type, it is usual to find high noncoagulable nitrogen in the blood, a much reduced phenolsulphonephthalein excretion, a high blood pres-

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[1] Kisskalt Ztschr f Hyg 1915 lxxx, 145

[1] Henderson L. J and Palmer W W On the Several Factors of Acid Excretion Jour Biol Chem 1914 xvii 314

[2] Palmer W W, and Henderson L J A Study of the Several Factors of Acid Excretion in Nephritis, Arch Int Med, July 1915, p 109

glands The effect of the anterior lobe feeding was seen to last throughout the adult life of the individual The administration of the anterior lobe gland substance to parent animals evidently also exerts a stimulating influence on the offspring in intra-uterine life and during lactation, and when the experiment is carried further, and the feeding to the young is continued after weaning, it has an even greater stimulating effect on growth, weight and development, and causes earlier and more frequent breeding, and an increased number of offspring in the litters The correlated changes in the sex glands — the ovaries, tubes and uterus of the female, and the testes of the male — produced by this feeding of a pituitary extract show an extremely selective and almost specific action of the latter on the genital system, according to Goetsch

The posterior lobe element, on the other hand, has an undoubted retarding influence on the development of the sex glands Therefore when the entire gland is fed, the peculiar influence of the anterior lobe portion may be obscured or nullified Ovarian extract (corpus luteum), according to Goetsch's observation, has a stimulating influence on the female, and a retarding influence on the male, sexual development

The outcome of the feeding of pituitary to laboratory animals, Goetsch suggests, should encourage further efforts to benefit states of ductless gland underfunction, particularly of the hypophysis, by the oral and possibly the parenteral administration of gland extracts We are reminded that some success has already been attained by such therapy Instances of characteristic sexual disturbances, including retarded menstruation and loss of sexual potency, may be cited Since many of the clinical conditions showing genital aplasia, adiposity and underdevelopment combine symptoms referable to certain of the ductless glands other than the pituitary, Goetsch has suggested that the extract of the latter should be given to help bring about normal sexual development and activity, and that with it might be given extracts of other ductless glands which would seem certainly to be involved

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Typhoid Immunizations During 1915—It has been the experience of the New York health department that persons whose circumstances permitted them to live elsewhere after the first alarm of typhoid or who belonged to families in which the patient could be completely isolated were apt to refuse immunization, while in crowded homes where conditions were bad the people were more ready to consent and the health department was more disposed to insist on the procedure During 1915 there were a large number of complete immunizations in connection with institutional outbreaks Here the situation could be controlled and practically every one exposed to infection was immunized the actual number of complete immunizations being 4 150 for the year This measure appeared to have a striking influence in checking the institution outbreaks The point to be emphasized is not the efficacy of typhoid vaccination, since that is manifest and unquestioned but to present the subject to the private physician and to urge his cooperation with the representative of the department in securing the immunization of all persons exposed to typhoid fever (save the few cases in which it is contraindicated)

Current Comment

INORGANIC SALTS IN THE DEVELOPMENT OF THE BODY

Little of a fundamental character is known today with respect to the real role of the inorganic elements in the body That a bone cannot develop without calcium, that a red blood corpuscle cannot come into existence without iron, or gastric juice exhibit its acidity without chlorin are biologic platitudes But the list of the ions which continually find their way into the body is by no means limited to so brief a number of the elements Potassium, sodium and magnesium, phosphorus and sulphur derivatives likewise belong in the customary intake, and they make up an integral part of living animal forms To what extent are they also necessary? What are their various functions? It is by no means futile to ask such questions, even if we customarily are indifferent to the answers Only recently it was pointed out[1] that potassium salts may exhibit unsuspected toxicity when they are prevented by suppression of kidney function from being promptly eliminated Yet potassium is surely no foreign element in the human organism The subtle part played by such elements and their salts is seen, for example, in the fact that a muscle, according to Overton, will lose its irritability if immersed in sugar solution, whereas the irritability is preserved if a small amount of sodium chlorid is added Let us frankly confess that the physiology and pathology of the inorganic elements in the body still remain largely to be written Jacques Loeb[2] has furnished an interesting instance of unexpected findings with respect to the relation of inorganic elements to motility Not long ago he demonstrated that it is possible to raise the banana fly on a sterilized liquid medium consisting of water, one or two sugars (glucose and sucrose), one ammonium salt (for example, ammonium tartrate) and some inorganic salts[3] Such a mixture is a well-known culture medium for certain micro-organisms, as yeast cells, which are capable of synthesizing their proteins and other complicated organic compounds from ammonium salts This remarkable outcome, suggesting the possibility of development of fairly complex animal organisms by synthetic processes from very elementary compounds, has furnished an opportunity to ascertain which of these are truly indispensable For micro-organisms the indispensable ions are, as a rule, the potassium, magnesium, phosphate and sulphate ions, while very often neither sodium chlorid nor calcium chlorid is required In Loeb's new experiments, five successive generations of flies have been raised in platinum vessels without any sodium or calcium chlorid other than that which may appear as impurities in the chemicals used The only salts added were potassium phosphate and magnesium sulphate Loeb concludes that as far as the evidence from these experiments goes we can, therefore, say that in these flies the muscular activity is possible either without any sodium or calcium or with only such traces as appear in the form of impurities in the chemically pure substances used in these experiments, while potassium as well as phosphate, and also sulphate, and magnesium must be added to the culture medium in appreciable quantity No one will be justified in applying these facts obtained from lower forms directly to the higher mammals They show, however, that when it is possible to conduct investigations under controllable and relatively simple conditions, surprising features of physiologic performance are sometimes disclosed These should ve as clues in the endeavor to unravel the com- ties of the functions of the less elementary forms fe

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[1] The Kidneys as a Factor of Safety Current Comment, The Journal A M A, Dec 25 1915, p 2246

[2] Loeb Jacques The Salts Required for the Devel Insects Jour Biol Chem 1915 xxiii 431

[3] Loeb Jacques Science 1915 xli 169

ALCOHOL AND IMMUNITY

The present campaign against the undue use of alcoholic liquors differs from the crusades of a generation ago in attempting to support all of its movements by the best evidence that science can furnish It is likely to succeed all the better, because the facts already ascertained to be true and sifted by critical analysis from the mass of conflicting statement advanced in the earlier period in themselves furnish a sufficient warning against excessive indulgence Today it merely remains necessary to mobilize these facts and advance them in the form of reasonable arguments rather than exaggerated claims Recently we presented evidence regarding the untoward effects of comparatively small doses of alcohol on some of the fundamental neural activities in man[1] The inevitable outcome is the establishment of a depression even of the simplest forms of motor processes There was nothing whatever to suggest true stimulation or increase in efficiency There is not a little evidence pointing to an unmistakable lowering of bodily resistance to disease after the prolonged administration of alcohol[2] This may manifest itself in a restricted formation of antibodies, and in increased susceptibility to bacterial infection, and related phenomena One feature of this phase of the alcohol problem has lately been the subject of new investigations which relate to the immunity factor Among others, Parkinson[3] failed to establish any influence of the use of alcohol on phagocytosis except when large doses or continuous moderate doses were taken At the hygienic institute of the University of Munich, Reich[4] has continued the study of the blood cells in moderate drinkers as contrasted with abstainers He found that the extent of phagocytosis of tubercle bacilli by human leukocytes in human serum showed no definite relation to the use of alcohol by the subjects The bactericidal action of normal human blood serum on typhoid organisms was observed to be more pronounced, on the average, in abstainers than in those accustomed to large quantities of alcohol The phagocytosis of typhoid bacilli likewise was accomplished more readily by the cells of those who do not indulge or rarely consume spirituous liquors Furthermore, the resistance of human red blood corpuscles to hypotonic salt solution appears to be diminished in some proportionate relation to the degree of alcoholic indulgence It should be clearly understood that these unfavorable biologic phenomena attending the more or less liberal use of alcohol are neither confined to the ingestion of this product alone nor universally or invariably obtained There are too many variables in such reactions to permit mathematical precision of occurrence These newer statistical indications, however, clearly conform to the generality of other evidence in placing the burden of defense on the regular use of so-called alcoholic stimulants

HEXAMETHYLENAMIN AND URIC ACID

If further evidence were necessary to show the futility of administering formaldehyd derivatives like hexamethylenamin as uric acid solvents, it could be found in the observations recorded by Haskins[1] under the auspices of the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry It is true that a solution of formaldehyd is a solvent for uric acid, and likewise that hexamethylenamin, which will liberate formaldehyd in acid solutions, has a similar solvent power These are facts elicited from a study of pure solutions of the respective substances in the test tube As the "Pharmacology of Useful Drugs"[2] has expressed it, however, it is one thing to hold a substance in solution or prevent its precipitation when one uses a concentrated solution of formaldehyd, and quite another matter to dissolve calculi in weak solutions, such as one may see in urine Haskins has found that the power of urines containing hexamethylenamin to take up uric acid in addition to that already present varies with the specimen examined, in any event, however, those which exhibit an enhanced solvent power are such as correspond in their acidity reaction with normal urines which have the ability to dissolve uric acid in appreciable quantity The hydrogen ion concentration is the dominant index in the matter It is freely admitted that perhaps after administration of excessive doses of the drug certain portions of the secreted urine may contain a sufficient concentration of it to impart to them a uric acid solvent power greater than the same urines would otherwise manifest But, as Haskins points out, this is scarcely of therapeutic value, for the required dose of hexamethylenamin is too large, and an equal or better effect can be produced more readily by administration of alkaline diuretics of sodium bicarbonate in reasonable quantities Even a suitable choice of diet, as Blather-

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[1] New Evidence Against Alcohol, editorial, The Journal A M A, March 4, 1916, p 742

[2] Laitinen, T Ueber die Einwirkung der kleinsten Alkoholmengen auf die Wiederstandsfähigkeit des tierischen Organismus mit besondere Berücksichtigung der Nachkommenschaft, Ztschr f Hyg u Infektions krankh, 1907-1908, lviii, 139

[3] Parkinson, P R The Relation of Alcohol to Immunity, Lancet, London, 1909, vii, 1580

[4] Reich, H W Ueber den Einfluss des Alkoholgenusses auf Bakterizidie, Phagozytose und Resistenz der Erythrocyten, beim Menschen, Arch f Hyg, 1916, lxxxiv, 337

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[1] Haskins, H D The Uric Acid Solvent Power of Urine Containing Hexamethylenamin (Urotropin) as Compared with that of Normal Urine, Arch Int Med, December, 1915, p 1055

[2] Hatcher, R A, and Wilbert, M I Pharmacology of Useful Drugs, Chicago, American Medical Association, 1915, p 164

wick[3] has shown, will accomplish the same end There is no longer a valid reason why practitioners should show the slightest deference to the assumed superior solvent virtues of the formaldehyd-hexamethylenamin combinations under whatever guise they may be offered

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Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities, new hospitals education, public health etc)

DISTRICT OF COLUMBIA

Medical Care of Delinquent and Neglected Children —Bills now pending in Congress for the reorganization of the Juvenile Court make it the duty of the parent guardian or custodian of any child within the jurisdiction of the court to cause such child to be examined by a duly licensed and practicing physician, if the child appears to be in need of medical care, either before or after hearing On the failure of the parent, guardian or custodian, the court may by proper order cause such an examination to be made A report of the examination must be made to the court In order that such a child may receive such examination and care as its welfare may require, the court may cause the child to be treated in a hospital. A clause requiring every official of the District to render to the court such assistance and cooperation as may be within his jurisdictional power will give the court the benefit of the services of the District alienist for such psychopathic investigations as may be necessary

Object to Use of Hospital Site —Owners and occupants of dwellings that have been constructed around the 40-acre site for a municipal hospital since it was purchased by the District government for that purpose some years ago are protesting against its use for hospital purposes The proposed hospital is classed as a potential danger to the community because it will harbor a large number of mental suspects, human derelicts and patients suffering from contagious and loathsome diseases The presence of the institution will, it is claimed, produce a constant feeling of gloom on all who must pass by or live near it The use of the streets leading to the hospital by ambulances and police patrol wagons is objected to The discharge of cured patients at the doors of the institution leaving them to find their ways back to their places of residence, is looked on as liable to cause trouble. The use of street cars by persons visiting the inmates will, it is said, interfere with the use of the cars by persons living in the neighborhood It is proposed to carry the fight against the use of the site to Congress, which controls the matter

Proposed Sanitary District for Maryland and the District of Columbia.—In order that the drainage from certain areas in Maryland adjacent to the District of Columbia may be disposed of safely and economically and without polluting streams flowing through the District, the legislature of Maryland is considering a bill providing for the appointment of a commission to take the matter in charge The commission is to make surveys and divide the area within its jurisdiction into drainage districts On determining which of these districts is most in need of sewerage and drainage facilities and of a water supply, the commission is to perfect detailed plans and specifications for the necessary work, with an estimate of the cost, and to publish these data in the county newspapers The boards of supervisors of elections of the various counties affected by the proposed plan must on request of the drainage commission call elections to determine the will of the people with respect to the matter If a majority vote in favor of the project the county commissioners may then sell bonds to cover the cost of the undertaking, and the work may be proceeded with The drainage commission is authorized to enter into an agreement with the proper authorities of the District of Columbia for the emptying of Maryland sewers into and through those of the District of Columbia, and vice versa

Medicinal Use of Alcoholic Liquors in the District of Columbia —To meet objections to the proposed prohibition law for the District of Columbia, raised by the Medical Society of the District, Senator Sheppard of Texas, who is the sponsor for the proposed law has given notice of his intention to offer certain amendments Under these amendments a retail druggist may sell alcoholic liquors which he could not do under the original bill Each sale, however, must be covered by a written and bona fide prescription The prescription must contain a statement that the disease of the patient requires such prescription and it must be canceled when filled The druggist must keep a record of all sales in which the purchaser must sign his name Ethyl alcohol may be sold without a prescription but sales must be recorded in the same manner as sales of alcoholic liquors Malt extracts and other proprietary medicines containing alcohol may be sold without prescription or record if they are so medicated as to be medicinal preparations or compounds unfit for use as beverages No physician may prescribe any alcoholic liquor except for treatment of disease which, after his own personal diagnosis he deems to require such treatment In addition to punishment by fine and imprisonment, it is provided that in case of second conviction the license of the physician or of the pharmacist to practice his calling shall be revoked

ILLINOIS

Society Discusses Public Health Legislation —At the March meeting of the Whiteside County Medical Society held in Sterling March 16 Dr George T Palmer Springfield under the auspices of the state board of health gave an address on *Public Health Legislation in Illinois* In addition to the members of the society county, town and city officials were present at the meeting

Personal —Dr Jacob J Mendelsohn has resigned as resident physician of the St Charles School for Boys and will resume private practice in Chicago——Dr Flint Bondurant Cairo, has been appointed physician for the Children's Home succeeding Dr John J Rendleman Cairo who has acted in that capacity for twenty-five years——Dr George P Gill Rockford, gave an interesting account of his experiences in the war zone before the University Club Rockford March 9——Dr Heber Robarts has been elected president of the Safety First Society of Belleville——A luncheon was given at the Monroe Center Hotel March 8 in honor of Dr Henry G Davis who is about to leave on an extended trip to Alaska——The home of Dr James J Moran Spring Valley, was destroyed by fire March 8, with a loss of between $8 000 and $10,000——Dr Clarence M Cheadle Rockford has given several lectures on conditions in Serbia recently——Dr Clesson C Atherton assistant superintendent of the Watertown State Hospital who has been transferred to the Jacksonville State Hospital was given a farewell entertainment, February 28 at which Dr Joseph A Campbell superintendent of the institution presented Dr and Mrs Atherton with a handsome silver service a gift from the employees——Dr Edward A Foley of the Jacksonville School for the Deaf has been appointed assistant superintendent of the Watertown State Hospital

Chicago

Billings Received Harvard Appointment —Dr Frank Billings has been appointed visiting lecturer on medicine at Harvard University

Tribute to Favill —Members of the National Dairy Council representing every branch of that industry, held a memorial meeting at the Hotel Sherman February 28 to pay tribute to their late president Dr Henry Baird Favill

Save the Sight of Babies —This is the motto of a campaign which is to be inaugurated with a mass meeting in Fullerton Hall Art Institute, March 31 under the auspices of the Illinois Association for the Prevention of Blindness Drs Frank Cary, Edward V L Brown and Thomas A [illegible] are members of the executive committee of the association

Memorial to Student —Medical students of the University of Chicago and Rush Medical College are now maturing a plan to establish a research scholarship in the University as a memorial to Henry Ginsburg an alumnus of University of Chicago of 1914, and a member of the senior class of Rush Medical College who died at Michael Reese Hospital March 9 It is planned to raise $1 500 for the endowment of this scholarship

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[3] Blatherwick, N R. The Specific Rôle of Foods in Relation to the Composition of the Urine Arch Int Med September 1914 p 409

Another Typhoid Source —The health commissioner announces that the insanitary condition of the grounds of the South Shore Country Club may have been in part responsible for the epidemic of typhoid fever in the section supplied by the Sixty-Eighth Street pumping station There is said to be a building on the club grounds containing two shower baths and three toilets which have no connection with any sewer This building is within 100 feet of one of the principal intake wells of the pumping station

Chicago Men Make Addresses —Dr Dean DeWitt Lewis was the guest of honor and delivered an address before the Calhoun County (Mich) Medical Society at Battle Creek, March 7 ——Drs Arthur Dean Bevan and Lewis L McArthur delivered addresses before the Los Angeles County (Calif) Medical Association, March 2 Dr Bevan's subject was "Obsessions in Surgical Practice," and Dr McArthur spoke ' hrombo-Angiitis Obliterans"——Dr Albert E Halstead before the Muskegon-Oceana County (Mich) Medical , March 1, on "Clinical Significance of Increased cranial Pressure"——Dr Benjamin F Lounsbury addressed the Linn County (Iowa) Medical Society at Cedar Rapids, March 1, on "Fracture of the Os Calcis"——Dr Clifford G Grulee delivered the principal address at the sixteenth annual banquet of the Phi Rho Sigma National Medical Fraternity in Omaha, February 26

Personal —Dr Theodore B Sachs resigned as president and a member of the board of directors of the Chicago Municipal Tuberculosis Sanatorium, March 20 In his letter to the mayor, Dr Sachs expresses his opinion that "after ten months' experience with the present administration continuance of efficient service under the present conditions is practically impossible"——Dr Fred C Zapffe has resigned as secretary of the Chicago College of Medicine and Surgery ——Dr H Wernicke Gentles head of the First Aid Department of the Chicago Section of the American Red Cross, will conduct a class in first aid work at the University of Chicago during the spring quarter, under the auspices of the College Y M C A ——Dr and Mrs Arthur Dean Bevan have returned after a trip to the Pacific Coast ——Dr Edward K Armstrong has been appointed a member of the pediatric staff of Cook County Hospital, succeeding Dr Joseph Brennemann, resigned ——Dr Nelson H Lowry is ill at his home with scarlet fever ——Dr and Mrs E Wyllys Andrews have returned from Florida ——Dr Georgiana M D Theobald, as the result of a recent state civil service examination, has qualified for the position of pathologist at the Illinois State Eye and Ear Infirmary

INDIANA

New Buildings at Epileptic Village —The Indiana Village for Epileptics, near Newcastle, is to open two new buildings for men An appropriation has been made by the state for buildings for women, but it will be a year or so before these are completed The superintendent is seeking a list of all the epileptics in the state with a view to their transfer to the new institution

Sanitary Survey of Summer Resorts —During the coming summer the water department of the Indiana State Board of Health will conduct a sanitary survey of the summer resorts of the state The frequency of typhoid fever, following the return of persons from summer resorts, has led the board of health to believe that there must be some item of summer life which is not of the highest standard from a sanitary viewpoint

Personal —Dr George B Hoopingarner, secretary of the board of health, Elkhart, tendered his resignation after formal action by the two other members of the board to force him to resign The mayor charged him with various omissions of duty ——Dr Jesse L McElroy, Darlington, has resigned as house physician to the State Hospital, Indianapolis, and has been succeeded by Dr Frederick E Jackson ——Dr Walter B Christophel, Mishawaka, was seriously injured by the overturning of his automobile, February 21

Conference of Charities —The National Conference of Charities is to be held in Indianapolis, May 10-17 Among the names appearing on the program are Dr John N Hurty, secretary of the state board of health, Indianapolis, Dr Charles S Woods, superintendent of the Methodist Hospital, Indianapolis, Dr Fred Henshaw, dean of the Indiana Dental College, Indianapolis, Prof L J Rettger of the State Normal at Terre Haute, Dr David C Peyton of the Indiana Reformatory, Dr Samuel E Smith of the Eastern Hospital for the Insane, Richmond, Dr Juan B Guiteras, director of the National Hospital and professor of medicine, National University, Havana, Cuba, and Dr Eugene L Fisk, director of hygiene, New York

Food, Drug and Sanitary Inspectors Meet —The final session of the conference of the state, county and city food, drug and sanitary inspectors was held, March 16, at Indianapolis Dr Herman G Morgan, city sanitarian, discussed the diseases that may be spread by the milk supply of a city Dr John N Hurty, state health commissioner, spoke on the subject of "How Local Officials May Cooperate with the State Board of Health" Dr G W Butler, chief of the federal meat inspection work in Indiana, discussed the meat inspection work It was decided to organize a permanent association Dr Herman G Morgan, Indianapolis, was elected president, A W Hedrich, Chicago, vice president, and Harry S Truitt, Columbus, secretary

IOWA

Hospital News —A new hospital will be erected in Estherville in the early spring by Miss Josepha Roberts The building will cost about $7,000, will accommodate twenty patients, and will be under the charge of Drs Albert Anderson and Raymond C Coleman ——The state board of control has let the contract for the construction of an additional building at Oakdale, the State Tuberculosis Sanatorium, to a Cedar Rapids firm for $58,600 The new building will be four stories in height, fire proof, and will provide quarters for sixty additional patients ——Dr Lynn L Lorenz has leased the May Hospital, Charles City ——The Marengo Hospital will be ready for occupation about April 1

Personal —Dr and Mrs William L Allen, Davenport, have returned after a six weeks' trip to the Pacific Coast ——Dr Royal C Danley, Hamburg, fractured his collar bone and suffered severe bruises by the overturning of an automobile near Shenandoah, March 9 ——Dr Michael A Cunningham, surgeon to the State Sanatorium, Oakdale, has been made assistant superintendent of the institution ——Dr Oliver S Barber, Creston, has been appointed postmaster of that city ——Dr Campbell P Howard, Iowa City, delivered an address before the Des Moines Pathological Society, February 25, on 'Medical Aspects of the War in France"——Dr Will D Runyon, assistant superintendent of the State Sanatorium, Oakdale, has been appointed resident physician in the National Printers' Home, Colorado Springs, Colo —— Dr John Henkin has resigned his position in the children's department of the University of Iowa Hospital, Iowa City, to become an intern in Cook County Hospital, Chicago

KANSAS

State Society Meeting —The annual meeting of the Kansas Medical Society, which will also celebrate its semicentennial on this occasion, will be held in the Memorial Hall, Topeka, May 3 to 5 Among the speakers already secured from outside the state are Drs George W Crile, Cleveland, and Fred H Albee, New York

Dispensary Moved —The free dispensary of the Bell Memorial Hospital, Rosedale, has moved into new quarters and a new schedule is in operation In the morning from 10 to 12 o'clock, medical, surgical and eye cases will be treated, and the afternoon from 2 to 4 will be devoted to diseases of women and children, skin diseases, and diseases of the nose, ear and throat

Personal —Dr Samuel Adams, Niles, has been appointed assistant surgeon of the Soldiers' Home, Leavenworth —— Dr John W C Boone, assistant surgeon at the State Soldiers' Home, Leavenworth, has resigned, to take effect April 5 ——Dr Jacob R. Pierce has resigned as surgeon of the Soldiers' Home and has been succeeded by Dr S Clifford Cox, Washington, D C ——Dr Henry W Nye, Osborne, has been appointed local surgeon for the Salina Northern Railroad ——Joseph T Lovewell, Ph D, for eleven years secretary of the State Academy of Sciences, and for twenty-one years professor of physics and chemistry in Washburn College, Topeka, has announced that he will retire from the public service, July 1

LOUISIANA

Physician Wins Suit —A jury in the district court at Baton Rouge, in a suit brought by Dr Robert C Kemp against Stephen P Schuesster for $261 10 for professional services rendered the defendant's wife, rendered a verdict in favor of Dr Kemp

Dowling Initiated as Honorary Member of Fraternity.—Dr Oscar Dowling president of the state board of health, was initated, March 18 as an honorary member of the Alpha Beta Chapter of the Phi Beta Pi Medical Fraternity, located at Tulane University Addresses were made by Drs Homer J Dupuy, Jr, and Henry W E Walther

Transfer of Quarantine.—Mayor Behrman of New Orleans states that there has been little opposition to the Estopinal Bill, which makes an appropriation of $300 000 for a new quarantine station inside the city limits of New Orleans Options have been secured on a tract of land on the Algiers side of the river for the quarantine station, and the transfer at an early date seems assured

New District Society.—The first semiannual meeting of the recently organized Fourth District Medical Society which includes the Bienville Bossier, Caddo Claiborne DeSoto Red River and Webster parishes, will be held in Shreveport March 23 Dr Clifford H Iron Benton is president of the association, Drs Clarence E Edgerton Coushatta and John L Kimbell, Shreveport are vice presidents, and Dr A A Harold, Shreveport, is secretary-treasurer

MARYLAND

New Home for Hospital.—The Baltimore Skin and Cancer Hospital has recently purchased a new home on Greenmount Avenue, and proposes at an early day to establish a free dispensary in connection with the institution

Personal.—Drs Stewart Vernon Irwin and Jerome Pierce Webster of the staff of the Johns Hopkins Hospital have been named and now are on their way to Berlin to make a scientific examination of conditions prevailing at the great prison camps in Germany They will report to the American Red Cross headquarters at the American Embassy ——Dr Charles Wellman Mitchell former dean of the medical school of the University of Maryland and a leading specialist of Baltimore in children's diseases is very ill with pneumonia at his home.——Dr J McPherson Scott mayor of Hagerstown is seriously ill with pneumonia——Dr Arthur M Shipley entertained the members of this year's graduating class of nurses and the resident physicians of the University Hospital recently at his home in Baltimore——Dr John I Spearman, formerly of the staff of Mercy Hospital and now engaged in surgical work at that hospital and at the United States Marine Hospital, spoke before the members of the Medical Society of the University of Maryland and the College of Physicians and Surgeons His address was illustrated with photographs, and entitled 'Incidents of Service with the American Red Cross in Europe. Other speakers at the meeting were Drs E F Greutzner, Robert P Bay Harvey G Beck and Standish McCleary Dr Albert H Carroll was chairman and Dr Alexius McGlannan secretary ——Dr Frank W Keating, superintendent of the Rosewood State Training School, at Owings Mills, recently underwent operation for appendicitis at the University of Maryland Hospital, and is reported to be improving rapidly

MICHIGAN

Personal.—Dr Frank W Shumway, Lansing, has been appointed a member of the State Pardons Board succeeding Dr John C Brown, Battle Creek, term expired——Dr Heinrich A Reye, for two years a member of the medical staff of the Pontiac State Hospital, has resigned——Dr Emory J Brady, assistant medical superintendent of the Traverse City State Hospital has accepted the superintendency of a sanitarium in Colorado Springs, Colo——Dr Don M Griswold, formerly chief of the Detroit board of health laboratories, is reported to be ill with tropical fever in Trinidad

Scarlet Fever Prevalent.—A survey of Muskegon, Newaygo and Oceana counties for scarlet fever has been ordered by the secretary of the state board of health Dr George S Williams, Muskegon will be in charge of the survey The epidemic is reported to be due largely to laxity of quarantine and the failure of local health officers thoroughly to grasp the conditions facing them It is reported to be preliminary to a state-wide campaign against disease——The Muskegon Employers Association has officially tendered its support and cooperation to the health authorities in their fight against scarlet fever——During January and February 1916 1,188 cases of scarlet fever were reported to the state board of health, nearly double the number reported during the same period of 1915

MINNESOTA

Children's Hospital Needed.—Directors of the Charles T Miller Hospital, St Paul for which $1 750 000 was bequeathed by Mrs Miller, may be asked to apply the bequest to build a children's hospital, which is much needed in the city

Health Advertisements.—The Street Railway Company of Minneapolis has donated advertising space in its cars for six weeks to the Public Health Committee of the Civil and Commerce Association Cards will be placed in the cars giving advice regarding personal health and public sanitation

Public Health Association Work.—The people of the state contributed liberally to the Red Cross Christmas seal campaign raising $30 120 for the fund, or an increase of more than 50 per cent over the previous year Of this amount $13 000 is to be applied to the public health propaganda for the state

Communicable Diseases.—Dr E A King Minneapolis has been temporarily appointed an assistant in the city health department during the prevalence of measles Measles is reported to be very prevalent in Duluth Special contagious disease inspectors have been appointed to assist in stamping out the infection There are believed to be about 500 cases in the city

Hospital News.—The contract for a new addition to the State Hospital has been awarded to Mankato contractors The new hospital will accommodate seventy patients——The Ludestine Sisters have acquired the property of the North Minnesota Hospital International Falls The institution has accommodation for fifty patients——A movement has been initiated at Barnesville to establish a hospital in that village

Visiting Nurses.—The Minnesota State Public Health Association has employed two nurses to spend about one month in each community They report that in cities of about 3000 one nurse could be kept busy almost the entire year for the schoolchildren alone In Worthington for instance with a population of 2800, 25 per cent of the children have defective vision 20 per cent defective hearing and 95 per cent need the attention of dentists Similar findings were reported at Montevideo

Sanatorium News.—In the Marshall Roseau County Sanatorium matter, in which there was discussion over the selection of a site Roseau County has declared its intention to withdraw from the agreement and it is now proposed to unite Marshall and Pennington counties in this project with Thief River Falls as a site for the sanatorium——The Aitkin Crow Wing County Tuberculosis Sanatorium Association has decided on the erection of a sanatorium on the site of the former fish hatchery of Crow Wing County near Deerwood at a cost of $30 000 The sanatorium will accommodate thirty five patients

Personal.—Dr Joseph A Gates Kenyon a member of the legislature from Goodhue County in 1905 1907 and 1909 announces his candidacy for lieutenant governor of the state——Drs Edward L Webber and Edward H Nelson are rival candidates for president of the village of Chisholm Dr Arthur L Benjamin Minneapolis has been elected president, and Dr Ernest Z Wanous secretary-treasurer of the McLeod County Association of the Twin Cities——Dr Samuel H Boyer, Duluth, has been appointed a member of the State Board of Medical Examiners, succeeding Dr Frank B Hicks, Grand Marais term expired

MONTANA

Personal.—Dr Thomas A Mackenzie Miles City, has started for Calgary to report for duty for overseas service with the Canadian forces——Dr Clarke S Smith Kalispell a member of the Chicago unit, has returned from service in Northern France, about forty miles from Ypres

Hospital News.—A new fireproof hospital four stories in height, 150 by 40 feet is to be built in Missoula by the Northern Pacific Beneficial Association——Work will soon be commenced on the additions to the State Tuberculosis Sanitarium, Galen for which $20 000 was appropriated by the last legislature The additions will increase the capacity of the institution by thirty patients A dining room, kitchen and hospital pavilion will also be built

NEBRASKA

New Officers.—Johnson County Medical Society at Tecumseh, February 23 president, Dr Dora M Judkins-Davies, vice president Dr Joseph M Curtis, and secretary-treasurer, Dr Truman E Fairall (reelected), all of Tecumseh

Personal—Dr John H Vance, Omaha, who has been seriously ill with septicemia, is reported to be convalescent —— Dr William D Guttery, superintendent of the Nebraska State Hospital, Norfolk, has been permanently suspended and has returned to his old home in Pilger Dr Harry R Carson is temporarily acting as superintendent

NEW YORK

New State Secretary Appointed—At a meeting of the Council of the Medical Society of the State of New York, March 15, Dr Floyd M Crandall was appointed secretary to fill the vacancy caused by the death of Dr Wisner R Townsend

Incorporate for Study of Tuberculosis—The Association for the Promotion of Medical Research for the Prevention Cure of Tuberculosis was incorporated, March 12 The office of this organization will be in Manhattan, but its of labor will include the entire United States It pro- s to establish professorships and scholarships in medical schools, and to maintain institutions for the treatment of tuberculosis

Would Aid State in Establishing Psychopathic Institution—At a hearing on the Wheeler bill, March 15, Dr Max G Schlapp stated that a donor who did not wish his name divulged had offered *$500,000* toward a psychopathic institution provided the Wheeler bill was passed by the legislature This bill would create a state clearing house for the mentally deficient and would create a commission of seven with an executive manager to supervise the work of examining and diagnosing the cases of the mentally deficient and to investigate the causes of mental deficiency No one opposed the bill

Anthrax—The Division of Industrial Hygiene of the State Industrial Commission has been investigating cases of anthrax which have developed in the state During the last year, in the upper district of New York, eleven cases occurred in human beings, seven of which developed in tannery workmen, three among farmers and one in a schoolboy Of these cases, four proved fatal The appearance of the disease appeared after the handling of Chinese and South American hides The medical inspector states that "the confiscation and destruction of infected hides of carcasses of domestic animals and the preclusion from commerce of imported spore-bearing skins, are the only means of combating anthrax which is at our disposal"

Mohansic Hospital Plan Abandoned—Governor Whitman and legislative leaders, after a conference on March 17, decided that some sort of measure providing for the abandonment of Mohansic State Hospital and the Yorktown Heights Training School for Boys on the Croton watershed should be put through at the present session of the legislature The question that remains to be decided is the terms on which this abandonment should be taken, some holding out that the city should reimburse the state for the money spent there since the reason for abandoning the institution is that it menaces the purity of the water supply of the city, and a former bill providing for abandonment was vetoed by Governor Glynn at the request of the mayor of the city

New York City

A New Eye Clinic—The West Side German Hospital and Dispensary opened its eye clinic, March 15 Dr Alfred H Riedel is chief of clinic

Personal—Dr John E Daugherty has been appointed medical superintendent of the Greenpoint Hospital, Brooklyn, to succeed Dr Charles F Sanborn

Decennial Celebration of Society—The Williamsburg Medical Society will celebrate its decennial by a banquet and entertainment given in honor of Dr Abraham Jacobi, April 14, at Willoughby Mansion, Brooklyn

Harvey Society Lecture—The ninth lecture under the auspices of the Harvey Society, delivered at the New York Academy of Medicine, March 25, by Dr Rollin T Woodyatt, University of Chicago, was on "Intermediate Carbohydrate Metabolism"

Memorial Tablets Unveiled—Memorial tablets to Dr Abram Brothers and Dr Archibald Isaacs, lately members of the medical staff of Beth Israel Hospital, were unveiled and dedicated at that hospital on Sunday, March 12, with appropriate ceremonies

The Pilcher Semicentennial—The Lewis Stephen Pilcher semicentennial will be celebrated May 11, 12 and 13, with a program consisting of public clinics and a public banquet on the evening of May 12 This celebration will be of not only national but international significance

Memorial to Dr O'Connell—The last report of the late Dr J O'Connell, as health officer of the port, is to be printed and circulated to the extent of a thousand copies, as a memorial to his work during his term of office The senate passed a resolution authorizing the printing, March 16

Memorial Hospital at Irvington—Mrs Isaac L Rice has purchased about 14 acres of land on Broadway, Irvington, N Y, known as the Guiteau estate, as a site for the million dollar memorial hospital to be erected in honor of her husband The nucleus of the institution will comprise four buildings, the main structure containing 100 beds and a number of private rooms The hospital will be allied with the Beth Israel Hospital, and will be especially for persons suffering from nervous breakdown

Preparing for Mosquito Campaign—It has been announced that the week beginning May 1 will be designated "mosquito week," when special efforts will be made to exterminate the pests and do away with mosquito-breeding collections of water In preparation for this campaign the board of health will breed a colony of mosquitos for purposes of experiment and demonstration in the public schools, hoping in this manner to familiarize the pupils with the requirements and habits *of the mosquito and to interest them in its extermination*

For Drug Addicts—The Board of Inebriety has, with the aid of the Commissioner of Charities, obtained additional facilities for the treatment of drug addicts at the City and Kings County hospitals These hospital facilities, in addition to the hospital and industrial colony for inebriates at Warwick, N Y, where construction is under way which will provide accommodations for 300 inmates, will make possible for these drug habitues a continuity of skilled treatment and proper control until they are ready to be returned to the city

Hospital and School for Defective Children—Commissioner of Charities John A Kingsbury has announced that an initial appropriation of $600,000 has been made to start the work of rebuilding and reorganizing the New York City Child's Hospital and Schools on Randall's Island, where the city's mentally deficient children are housed, and that it is understood that $1,000,000 more will soon follow He also announces that the name will be changed so that New York may forget the archaic institution and think of a modern and well-equipped institution for the care of mentally defective children There are at the present time about 2,000 defectives and defective delinquents in the institution It is estimated that there must be 120,000 defectives in the city

Lectures on Military Administration—A course of six lectures on military administration, medical and surgical, will be given at the College of Physicians and Surgeons in the City of New York on Tuesdays at 5 p m, beginning March 28 These lectures will be opened to the general medical public as well as to the students The schedule is as follows

March 28 "Organization, Equipment and Training of Armies," Lieut Col William S Terriberry, M C, N Y N G
April 4 'Organization of the Medical Department, and Its Service in Campaign," Major Joseph H Ford, M C, U S Army
April 11 Wounds in War, their Complications and Treatment," Major Joseph H Ford, M C, U S Army
April 18 'The Personal Hygiene of the Soldier," Major Sanford H Wadhams M C, U S Army
April 25 "*Camp Sanitation*," Captain Philip W Huntington, M C, U S Army
May 2 Preventable Diseases in War," Captain Philip W Huntington, M C, U S Army

Activities of the Health Committee of the Academy of Medicine—The Public Health Committee of the New York Academy of Medicine has issued a leaflet containing a summary of its activities during January and February These include the recommendation of the transfer of quarantine to federal control, the matter of social health insurance, including provision of periodic medical examinations, the supplying of medical, surgical and nursing aid, the cooperation with state and local health authorities, the utilization of existing dispensaries for the administration of medical benefits, the arrangement for medical and surgical care where no dispensaries exist, the construction of a contagious disease hospital in the Bronx, a study of the present facilities for diagnosis of suspected cancer tissue, a fifth medical year, the study of hospital standards, their efficiency and relation to medical examination, the Gary plan of school instruction, the question of street accidents, overcrowding of infants' wards and institutions, standardization of commercial diagnostic laboratories, legislation with reference to "patent medicines" and medical advertisements and the concentration of activities within the department of education

Clinic for Pay Patients at Mt Sinai Hospital—A clinic for pay patients has been proposed to be conducted by the Mt Sinai Hospital in connection with a group of specialists This clinic is for the use of ambulant patients in moderate circumstances that they may be able to consult reliable specialists without being compelled to pay office fees beyond their means The purpose of the clinic is to confine its aid to persons having incomes of $1 200 a year or less The patients will be admitted on week days from 7 30 to 9 p m There will be a registrar who will receive applicants or reject applicants not eligible for treatment keep the records of the clinic, and collect and account for the fees The hospital contributes the use of its dispensary building and equipment, all earnings and necessary expenditures will be divided among the members of the medical staff in proportion to their hours of attendance The standard fee for routine or office consultation will be $1 Medicine will not be furnished by the clinic and a moderate extra charge will be made for Roentgen ray work or any other unusual laboratory investigation The members of the staff will be prepared to see patients of the clinic in consultation with general practitioners The fees to be charged for this work will be agreed on by the practitioner presenting the case and the clinic physician consulted, and should ordinarily not exceed $2 or $3

PENNSYLVANIA

Personal.—Dr Zachariah C Myers, York, was elected president of the Pennsylvania branch of the General Alumni Association of the University of Maryland at its annual meeting in Philadelphia ——Dr Elmer E Bush, Danielsville has been appointed district surgeon for the Lehigh and New England Railroad ——Dr John C Miller, Shenandoah, has returned after a year of Red Cross work in Europe

Philadelphia

Personal.—Dr Ernest LaPlace has been appointed professor of surgery in the Medico-Chirurgical College of Philadelphia, succeeding the late Dr William L Rodman ——Drs William K. Mueller, chief medical examiner, and Dr Clinton J Foltz, assistant medical examiner severed their connection with the Civil Service Commission, March 15 when the new ordinance became effective ——Dr John P Bethel has been appointed first assistant bacteriologist in the bureau of health ——Dr Powell P Fenton, who has been on duty with the ambulance service in the French army, has been awarded the Cross of War by the French government for distinguished and meritorious service ——Dr Francis V Gowen sailed from New York for Bordeau, March 10, on the *Chicago* He will be attached to a military hospital at Beaumont, Perigord France

Honor to Rodman—The Philadelphia County Medical Society, at its meeting March 8, adopted resolutions setting forth the high esteem and great worth of the late Dr William L Rodman as an author teacher and surgeon, and placing on record its high appreciation of his professional attainments and manly character ——The funeral of Dr Rodman was held from his house, March 10, and services were held at the Second Presbyterian Church, and the body was taken to Frankfort, Ky, for interment The pallbearers were Surg-Gen William C Braisted U S Navy, Surg-Gen William C Gorgas U S Army, Surg-Gen Rupert Blue, U S P H S, Col Louis A LaGarde, M C, U S Army, retired, Capt Hugh Rodman, U S Navy, Drs L Webster Fox and Joseph W Holland, Philadelphia, and Dr William B Coley, New York.

TEXAS

Dispensary Established—A free medical dispensary was opened in the basement of the Abilene County Courthouse, Abilene, March 6, under the auspices of the Women's Federated Clubs of the city The free clinic for white women has been established at the John Sealy Hospital The clinic will be open from 12 to 1 p m every day A woman physician will be in charge on Tuesdays, Thursdays and Saturdays, and a male physician on the other three days of the week.

State Board Happenings—Dr Arthur McElhannon, Sherman, has been appointed a member of the State Board of Medical Examiners, vice Dr Milton P McElhannon, Belton, resigned ——At the annual meeting of the board, held in Temple, March 5, S L Scothorne, Dallas, was elected president, Dr John S McCelvey, Temple, secretary-treasurer, Dr Horace C. Morrow, Austin, vice president, Dr John H McLean Fort Worth, chairman of the college committee, Dr Thomas J Crowe, Dallas, chairman of the executive committee and H B Mason, Temple, chairman of the reciprocity committee

Health Work Demonstration—The Texas State Board of Health has adopted the plan of demonstration of public health work Three demonstration districts have been selected in Leon Harrison and Polk counties, and every feature affecting the health of the inhabitants of these districts will be studied This intensive health work begins with a series of lectures on prevention of illness delivered in every locality in the county A sanitary survey will then be made a laboratory established a house-to-house canvass made, homes and public buildings inspected and all sanitary conditions pointed out, the schoolchildren inspected for physical defects lectures on preventive diseases will be given and during the last week of the campaign carpenters will be secured houses screened and sanitary privies constructed This campaign is under the direction of Dr Platt W Covington of the International Health Commission, working under the auspices of the state board of health

GENERAL

The Wine of Cardui Suit—As we go to press the jury in the suit of the Chattanooga Medicine Co vs the American Medical Association and the editor of The Journal is being impanelled

The President to Regulate Sanitation in the Canal Zone—The president will be authorized, if a bill recently introduced by Representative Britten of Illinois becomes a law to make rules and regulations in matters of sanitation and quarantine and regulations of a police nature for the Canal Zone

Ill with Typhus in Mexico—Drs Carlos Husk and Peter K. Olitsky, members of the expedition sent by the Rockefeller Foundation to combat typhus fever became ill with typhus fever at Nuevo Laredo, Mexico It is reported that the condition of Dr Olitsky is improved Dr Husk died March 20

Medical, Scientific, Educational and Philanthropic Institutions Not to Be Affected by Fixed Price Legislation—A bill has been introduced into Congress by Senator Ashurst of Arizona, providing a method whereby a grower, producer, manufacturer or owner of an article under a trade-mark or special brand who sells it to a dealer, can prescribe the price at which it shall be resold, the object being to prevent cut prices It is expressly provided however, that the act shall not apply in cases of sales of such articles to any society or institution established solely for educational, medical scientific or philanthropic purposes

Oppose Whitman's Plan—Governor Whitman's plan to turn over the office of health officer of the port of New York to federal authorities is apparently facing defeat in the legislature as the senate finance, and assembly ways and means committees have failed to take any action on the administration bills clearing the way for this transfer, and as the finance committee has thus far refused to report the governor's nomination of Assistant Surg-Gen Leland E Cofer, U S P H S, temporarily to succeed the late Dr Joseph O'Connell, Brooklyn, as health officer Dr Cofer was nominated merely to fill the unexpired term of Dr O'Connell

Viruses, Serums, Toxins and Analogous Products for Use in the Treatment of Domestic Animals to Be Better Supervised—A comprehensive bill to regulate commerce in and importation of viruses, serums, toxins and analogous products for use in the treatment of domestic animals has been introduced into Congress by Representative Steele of Iowa If enacted in its present form domestic animals will have better legal protection against danger from the class of remedies named than will human beings, unless in the meantime there should be similar legislation for the protection of the humans The execution and enforcement of the law will be under direction of the secretary of agriculture

Social Hygiene—The prize of $1,000, given by the Metropolitan Life Insurance Company, through the American Social Hygiene Association, for the best pamphlet on Social Hygiene for Boys and Girls, has been awarded Dr and Mrs Donald B Armstrong of Stapleton, S I Dr Armstrong is director of the Social Welfare Department of the New York Association for Improving the Condition of the Poor and Mrs Armstrong is actively interested in social and philanthropic work. Nearly 500 essays were entered in competition from all parts of the United States, Canada, Europe and South America, and the task given the judges to compare and pass on these manuscripts was not light The judges were Mrs Martha P Falkner, superintendent of the Sleighton farms, State Training School for Girls, Darlington, Pa , Lee K Frankel, sixth vice president of the Metropolitan Life Insurance Company, New York, Dr Luther H Gulick, president of the Campfire Girls of America, Miss Julia C Lathrop, chief of the Children's Bureau of the United States Department of Labor, Dr Milton J Rosenau, Harvard Medical School, Dr Victor C Vaughan, dean of the Department of Medicine and Surgery, University of Michigan, and Mrs Ella Flagg Young, formerly superintendent of schools of Chicago Dr and Mrs Armstrong's essay will appear in the next issue of the *Quarterly Magazine* of the American Social Hygiene Association

Bequests and Donations—The following bequests and donations have recently been announced

iess County Hospital, Washington, $6,000, by the will of Miss lizabeth Hogshead of that city

Lebanon Hospital, New York, $7,000, and a medical library valued at $4,020 by the will of Abraham Meyer

New York Eye and Ear Infirmary, $10,000, by the will of Miss Serena Rhinelander

Methodist Episcopal Hospital, Brooklyn, $10,000, by the will of George W Collard

Beth Israel Hospital and Lebanon Hospital, New York, each $1,000, by the will of Henry Glass

Beverly (Mass) Hospital about $7 000 being one half of the residue of the estate by the will of Annie F Simonds Beverly

Grady Hospital, Atlanta Ga , a donation of $10 000, for the building of a nurses' home by Mrs Joseph Hirsch Joseph H Hirsch, Jr , Atlanta Mr Milton Hirsch, Chicago, and Mrs Arthur L Wile, Savannah Ga The home for nurses is to be known as the Joseph Hirsch Memorial

Lakeside Hospital, Cleveland, $250,000 Charity Hospital, $50 000 St Alexis Hospital, and the School of Medicine of Western Reserve University Cleveland, each $50,000 and the Babies' Dispensary and Hospital $25,000, the Tuberculosis Free Dispensary and the Maternity Hospital, Cleveland, each $25,000, by the will of Robert R Rhodes, Cleveland

St Luke's Hospital Orlando, Fla , a donation of $5,000, from "a friend on the East Coast "

Dr Calvin S May, New York, $2 000, by the will of Mrs Alice T Wheelock

Dr George M Swift New York $10 000 St Mary's Free Hospital for Children New York $80 000 St Luke's Hospital, New York $25 000, by the will of Mrs Mary Van Ness Jackson

Sisters of Charity of St Vincent De Paul for establishing a branch of St Vincent's Hospital at Stanford Dutchess County, N Y , for the treatment of sufferers from cancer, $300,000 St Joseph's Hospital Yonkers N Y $10 000 German Hospital Catholic Institute for the Blind and Knapp Memorial Eye Hospital, New York, each $5,000, by the will of Mrs Mary A *Halloran*

Davis Memorial Hospital, Elkins, W Va , $30,000, by the will of Henry Gassaway Davis

FOREIGN

Deaths in the Profession Abroad—P Grocco, senator and professor of internal medicine at the University of Florence Italy and author of numerous contributions to science on the pathologic physiology of the heart and lungs, aged 60 Grocco's paravertebral triangle of dulness on the side opposite a pleural effusion and his method of percussion are familiar in the textbooks——J F Schmid of Bern, Switzerland, chief of the national public health service, which he was influential in organizing and had brought to a high grade of efficiency during his twenty-seven years of service in it, aged 66

WAR NOTES

The Censor in Italy—An Italian exchange brings word that the authorities have forbidden the publication of any items relating to the health and sanitary condition of the troops

The Camp University in Italy—The *Policlinico* relates that on February 13 San Giorgio di Nogaro was the scene of a notable event, namely, the inauguration of the "Universita *Castrense*," *under the auspices of the* government and the military authorities The aim of the "Camp University" is to enable the last two years' medical students serving in the army to continue their medical studies and keep up their courses Professor Tusini is rector of the university, and Professor Ricci has charge of the bacteriologic laboratory and instruction The list of professors includes some of the leading scientists of Italy, serving as consultants with the army, including Ascoli, Dionisi, Lustig and Sclavo There were 400 medical students at the inauguration, and the enthusiasm was great Barracks have been provided for the students' lodgings, the lectures are to be given in the town hall and other buildings Besides the facilities for teaching afforded by the base hospitals for sick and wounded soldiers, headquarters have been arranged there also for cases of nervous and mental disease, etc , and every effort is being made to have the courses complete

BERLIN LETTER

Berlin, Feb 15, 1916

Congress of the German Orthopedic Society

The meeting of this society was held February 8 and 9, with a program of unusual interest

THE SAUERBRUCH ARTIFICIAL HAND

A notable contribution was that of Professor Sauerbruch, director of the surgical clinic in Zurich, who described an artificial voluntarily functionating hand which he had devised With this hand the patient is able to lift 10 kg, and the flexor power of the forearm muscles can be made to average between 30 and 45 kg Exercises will increase this function, and at no time is it lessened The finger action is regulated by means of a peculiarly constructed system of pulleys, permitting each finger to be moved separately and to any desired degree, so that objects of irregular contour can be grasped firmly Sauerbruch discussed at *great length* plastic operations to be performed for the purpose of utilizing, to the fullest degree possible, not only the tendons of muscles, but also the muscles themselves He showed how the action of the biceps and triceps muscles could be carried over to this artificial hand In the absence of a suitable illustration, words cannot be made to describe the apparatus adequately , but it would seem that this artificial hand is "almost human" While the fingers are closed by muscular action, they are opened passively by means of springs The fingers are closed so tightly that it is almost impossible to open the hand forcibly This makes the hand exceedingly valuable, because while the fingers are kept closed it is impossible to drop any object which has been grasped by them With a little practice the most wonderful things can be done with this artificial hand, although it is still an artificial hand and cannot be made to perform the work of the natural hand

REGENERATION OF NERVES

Another paper of great interest was that of Professor Edinger of Frankfort on the regeneration of nerves and a new operation for uniting severed nerves He believes that the reunion of divided nerves is brought about, in part at least by means of a semifluid substance or tissue thrown out by the ganglion cells, and that new material for growth is found in the peripheral "accessory growth" cells Edinger succeeded in constructing a similar material from silicic acid The neuraxis or axis cylinder remains permanently separated from its neuron The separated portion of nerve fiber disintegrates, only the accessory cells for growth remain alive Straightway, however, a new axis cylinder is thrown out from the ganglion cell, and nerve regeneration as well as restoration of function is possible even after years have elapsed since the destruction of the nerve, unless the growth of the nerve fiber is checked by scars or otherwise Embryonal neuroglia tissue has been utilized for plastic work, and Edinger made use of such tissue in his neuroplasty A section of artery was removed from an animal and filled with embryonal nerve tissue The proximal and distal ends of the divided nerve were then placed within the lumen of the artery above and below, and the nerve ends reunited themselves by growth with astonishing rapidity Ludloff's technic is said to make it possible to adapt this procedure to any case no matter how great the distance between the divided nerve ends Therefore, many patients have been restored to usefulness who previously would have suffered from a perpetual paralysis of the particular muscle or muscles involved Ludloff reports a case in which *function* was restored within a few weeks, *although 15 cm of the* ulnar nerve had been resected

SHOT WOUNDS OF PERIPHERAL NERVES

Professor Foerster of Breslau *said that the most important* shot wounds of peripheral nerves are those *in* which the nerves of the upper extremity are injured Frequently the nerve is completely divided, and then again the ends may be united by scar tissue The great problem to be considered is how function can be restored Many of these shot wounds heal spontaneously, but some do not Foerster sutured the nerve in seventy-seven cases, and in fourteen he performed a neuroplasty The result in most cases was that the patients were rendered fit for duty Stoffel of Mannheim is not so well satisfied with this work Many operations are performed late, *and frequently* the distance between the divided nerve ends is very great Poor technic also is responsible for failures He described a new method of nerve suture which makes it *possible* to reunite the nerve ends without tension or hemorrhage, *no matter* how great the distance between them He reported a large number of cases in which he operated and the results show that he was too pessimistic in his statements

SCHOOLS FOR SOLDIERS WITH BRAIN INJURIES

In discussing this subject, Professor Goldstein of Frankfurt-on-the-Main said that injuries to the brain result not only in physical, but particularly in psychic defects the latter predominating Speech disturbances of various kinds practically make invalids of these patients, and they become unfitted for various occupations Many of the mental disturbances, if not of severe type gradually disappear spontaneously, some of the patients can be reeducated especially if they are young, so that a sort of compensation for lost function can be established They must be taught to speak just as children are, but they will be found to be much more backward The only proper teacher for them is a physician who is well versed in neurology and neuriatry A special school should be established, and the reeducation treatment must be begun early before the surgical treatment is completed Instruction should be individual, and special consideration given to the fact that these patients tire easily and that psychic shocks must be avoided The schools should be established in hospitals, and special institutions for further treatment provided so that the patients can remain separated from the usual run of "nervous" patients The results obtained thus far are very promising It probably will not be possible, however, to restore these patients so that they can return to their former places in the community, but every effort should be made to influence them psychically to a degree which will permit any one of them to return to his family

Professor Poppelreuter (Cologne-Lindenthal) described his experience at an institution of this kind in Cologne There were sixty patients with twelve instructors Attached to the school is a workshop or a sort of manual training department in which can be determined the patient's ability to do work. Many of the injured are able to work, although they cannot resume their places in the ordinary workaday world Therefore, suitable employment must be secured by some body organized for that purpose

Professor Gutzmann of Berlin did not agree with Goldstein that these patients should be taken in hand early He has eighty patients suffering from speech disturbances in his care at the Charite. His experience has led him to fear that harm may be done by beginning this instruction too soon

PARIS LETTER

Paris, Feb 24, 1916

The War

DISINFECTION AND IMMEDIATE OR EARLY UNION OF RECENT WOUNDS

The use of Dakin's fluid in the treatment of wounds, about which so much has been said of late continues to be much discussed in medical societies At a recent meeting of the Societe de chirurgie de Paris, Dr Cuneo showed that in order to disinfect a recent wound and obtain immediate or early union there is no need to employ almost continuous lavage, lasting possibly several days, with Dakin's fluid Whenever Cunéo had to treat wounds several hours old, he disinfected and reunited them successfully in the following simple manner In the case of a seton wound amenable to immediate disinfection, by means of a pair of long forceps he passed through the wound a gauze compress, soaked in any suitable disinfectant, such as hydrogen peroxid, undiluted or diluted, tincture of iodin, 1 20, etc Holding the two ends of this compress, he rubbed it vigorously back and forth through the wound, removing the debris of clothing and other foreign matter This procedure was repeated two or three times Nine times out of ten the patient developed no complications If the wound became infected, Cuneo laid it open In this way he or his assistants treated hundreds of wounded In cases of tortuous wounds, the technic was a little more complex The wound, made larger if necessary, was held open by traction forceps Then some tepid solution was poured in until all of the recesses were washed *out* The wound, having been well cleaned, was then closed without drainage.

In the case of head injuries, Cuneo carried out the following procedure early on the day that the wounded arrived He outlined around the cutaneous wound a large flap with the convexity uppermost, the wound was circumscribed by an incision and immediately sutured The site of the fracture was then cleaned, the splinters removed, etc., and the generally abundant hemorrhage was arrested with tampons Two or three days afterward, if the patient was doing well, the tampon was removed and the flap was sutured without draining Wounds treated in this way gave a greater percentage of cures than that obtained by Cuneo with his old technic (cruciform incision, cleaning of the site of fracture, and prolonged tamponing)

Cuneo disclaimed the credit for originating the procedure described which is in general use at the front He believed that the recent circular addressed to the military physicians on the initiative of Dr Tuffier extoling the use of Dakin's fluid was, at least, futile

Dr Tuffier replied that, although several hours after the wound has been made a mechanical disinfection, consisting of opening up, the removal of foreign material, and the excision of mortified parts, was alone sufficient to insure secondary reunion of a wound of war, such a procedure is no longer sufficient after several days have passed At that time he believes a chemical disinfection necessary Such a disinfectant is Dakin's fluid which therefore ought to be considered an excellent topical application

Dr Quenu believes that this statement of Tuffier's throws considerable light on the question of dressing with Dakin's fluid Tuffier admits, in fact, that early primary reunion will take place with any chemical application whatever, provided the wound is cleaned during the first hours after it has been received and is freed from contused parts and splinters Quenu has repeated this continually to the Societe de chirurgie and the Academie de medecine in response to a communication from Professor Pozzi (The Journal, Dec 11, 1915, p 2101, and Feb 5 1916, p 442)

Dr Broca stated that for a long time all surgeons have been aware of primo-secondary reunion of wounds, that is to say reunion of wounds at the stage of granulation Why, then has this "new" method created such a sensation? Does it not seem as if Dr Carrel, who is a physiologist but not a surgeon finding himself confronted by facts that heretofore were unknown to him, believed his practice new because surgeons had passed over in silence observations which to them were not unusual?

Professor Monprofit of Angers believes that it is unwise to speak too much at present of immediate or secondary reunion in surgery at the front, where even now there may be seen at times unsatisfactory results from immediate reunions, it is to be feared that inexperienced persons may be induced by such reports to attempt to produce reunions that will not be favorable to the wounded Monprofit believes that it is best to hold to the classic rules of surgery—incision, opening up cleaning the wound, and drainage—the nature of the antiseptics used being of less importance

Dr Hartmann concluded (1) that, according to the consensus of opinion, disinfection of wounds of war is easier the sooner the treatment *is begun* after the wounds have been received, (2) that this disinfection may be effected by different means, Tuffier himself described a series of complicated fractures of the thigh, the humerus, and the pelvis that were reunited immediately without complications after disinfection by agents other than Dakin's fluid, thereby showing that this liquid, and, consequently also, the circular he prepared, is useless, (3) that the treatment of wounds described in this circular is even dangerous since it is practiced by physicians who have only *recently* had any surgical experience On the other hand, according to Monprofit physicians in general should realize the utility of opening up and draining

TREATMENT OF HEAD WOUNDS

Dr Arnaud made an interesting communication on this subject to the Reunion médico-chirurgicale de la X-e armee According to him, every head wound, however small, should be laid open to ascertain whether or not there has been any injury to the skull Even if there seems to be a mere scratch or abrasion, the skull should be trephined, for thus it may generally be determined whether or *not* there has been any injury to the inner surface of the skull It is even more important that a more serious lesion (such as a fissured, comminuted or a depressed fracture) should be trephined The bony wound should be trimmed up and projecting tags removed In the absence of any injury to the dura mater the prognosis of these cases is very favorable When the dura mater has been injured, however small the lesion, the opening should be made larger, *for* in such cases there is often a large focus of injury subjacent to the cerebral contusion Any splinters of bone and any foreign body (fragment of shell) must be carefully removed In case of a deep wound of the brain, drainage must be instituted, not with gauze, but with a small drain inserted to the limits of the contused area and left in place for some time Patients treated in this manner are cured in large numbers, and often show no signs of deficiency At times, however, there arise complications, indicated by fever, vomiting, agitation, or coma, it may be a case of a simple meningeal irritation, the formation of an abscess in the area of contusion, often about a foreign body that has not been removed, or a case of meningeal encephalitis In such instances the surgeon should always have recourse to roentgenography, which will show the presence of any foreign body, and to lumbar puncture, which will afford information regarding the nature of the complication It is most necessary that the foreign body be removed In the case of meningeal irritation, lumbar puncture will have the best effect If cerebrospinal fluid is obtained mixed with pus the prognosis is very bad since, in the case of an area of deep cerebral contusion, it is a matter, not of a progressive meningo-encephalitis beginning in the brain, but rather of the irruption of septic substances into the ventricular cavities by means of a perforation in one of their walls

In the case of a perforating shot wound of the head (these are extremely grave) it is necessary to trephine the two openings the orifice of entry, which contains the splinters and is infected, must be drained particularly, on the other hand, the orifice of exit must be trephined extensively, for on this side are found fissured fractures and also a large area of cerebral contusion

There are some cases in which the skull alone has been injured and the dura mater has not been involved, the latter, however, does not pulsate, in such cases there is a severe cerebral contusion with often extensive subdural hematoma There may be also paralysis and convulsions In such cases a cruciform incision should be made in the dura mater and the subarachnoid space drained There is no need to fear infection from without or cerebral hernia The patients recover without complication much better than if the dura mater had not been incised

In fractures of the base of the skull in which the projectile penetrates a natural cavity (the auditory canal the orbit, or the submalar region), it is rash to operate on the site of the fracture, the wound should merely be disinfected To prevent the development of threatened encephalitis the surgeon must resort, as in cases of fracture of the base by contrecoup, to preventive drainage of the subarachnoid space according to the precepts of Vincent and Cushing

THE STATUS OF THE PHYSICIANS OF THE RED CROSS SOCIETIES

In the *Caducée*, a journal of military medicine, Dr Schneider, medical inspector of the army medical service (whose rank corresponds to that of general) complains of the status given to the physicians in the auxiliary hospitals under the Red Cross societies The lay elements in the management of certain societies have had, in general, an unfortunate influence on their policies, notably on those which concern the status of the physician-in-chief in the auxiliary hospitals The dominant idea of the regional committees of these societies is to obtain the services of the best physicians of the locality and to exploit their competence, their reputation, and their scientific position but not to allow them any administrative or directing authority The physicians are to content themselves with a medical role, and to regard themselves as lucky if their professional standing, their manner of operating, and the importance of cures obtained or of failures are not subjects of discussion by the nurses That civilian physicians, perhaps distinguished, but somewhat too old for heavy practice, should accept this very modest position is not at all astonishing If they are satisfied, there is nothing to be said about it But that the Red Cross societies should presume to impose these humble, and in fact, subordinate positions on all of the physicians they employ, and particularly on former physicians of the army, the navy, and the colonies, as well as those physicians of the reserve and the territorial army whom they have been obliged to borrow from the army medical service in certain regions for want of civilian physicians, Schneider believes, is absolutely intolerable It is too often forgotten that the instructions of May 21, 1913, in regard to the use during war of the resources of the country for taking care of the sick and wounded in the army specify that the auxiliary hospitals shall conform to the regulations of the medical service of the army of the interior These regulations give the supreme authority to the physician-in-chief, and subordinate the administrative power to him The desire to deprive of such authority the military physician placed by the regional director of the army medical service at the disposal of the auxiliary society, cannot be indulged The fact that he is employed temporarily in an auxiliary hospital should not deprive the military physician of the rights given him by the fundamental regulations of the army medical service

It may be objected, however, that the philanthropic societies cannot subordinate their hospital directors and administrators to the physician-in-chief since the societies support these establishments and are obliged at times to resist wasteful exactions of certain physicians While conceding this, Schneider believes that is possible to give the physicians-in-chief of the auxiliary hospitals the rights and duties of the physicians-in-chief of the military departments of the *hospices mixtes* in times of peace In these establishments the material and financial administration belong to the steward or the lay superintendent of the hospital This is in accordance with an agreement concluded between the war department and the administrative commission of the hospital—an agreement which fixes the daily amount to be paid by the government for the care given army patients The physician-in-chief, however, has authority in all matters concerning the technical part of the service, hygiene, discipline, etc This plan for the relationship between the physicians-in-chief and the administrative heads of the auxiliary hospitals is the most suitable, and strict observance of it will certainly give entire satisfaction to the interests of the societies and at the same time retain for the physician-in-chief the prestige and the just authority which he should have in a hospital caring for the sick and wounded of the army

VACCINATION AGAINST SMALLPOX DURING THE WAR

At the Societe de medecine de Nancy, Dr Perrin mentioned that, out of 29,076 vaccinations against smallpox performed during the first seven months of the year on soldiers of all ages, 13,616 or 46 14 per cent were successful The group of men aged over 36 and constituting almost one-fourth of the forces in question gave over 64 per cent of successful vaccinations This group is composed of regulars, aged from 36 to 42, and of reserves, aged from 43 to 48 There were more successful vaccinations (78 per cent) among the older men, among the younger ones the percentage was 75 per cent It appears from these figures that vaccination against smallpox is useful at all ages

LONDON LETTER

London, Feb 28, 1916

The War

RACIAL DAMAGE OF WAR

At the meeting of the Royal Statistical Society, Maj Leonard Darwin read a paper on 'The Statistical Inquiries Needed after the War in Connection with Eugenics" He said that our casualties might now be in number as high as 6 5 per cent, and the Germans' possibly between 20 and 30 per cent, of the number of fighting men available Though all must devote their main energies to winning the war, yet some thought might even now be given to the inquiries which might profitably be instituted, when peace gave more leisure, concerning its racial damage, which would depend on whether those killed were above or below the average in inborn qualities Balancing the conflicting considerations, the conclusion arrived at was that war unquestionably killed off the better types, and was therefore highly dysgenic The active causes of the damage would not cease with the war, because the birth rates of the higher types would continue to be adversely affected Those born in the last eighteen years would form an entirely undamaged section of the community, and it would be increasingly necessary for the next twenty years to inculcate a belief that where both parents are fairly healthy it was immoral and unpatriotic to limit the size of the family, except in view of bringing up the children in comfort, though not necessarily in luxury, and of there being fairly wide intervals between births It followed also that the racial damage would be at its worst when peace was declared, and the checking of the multiplication of the unfit would never be more needed than then

Sir William Turner

Sir William Turner, K C B, D C L (Oxon), LL.D (Cantab), F R S, principal of the University of Edinburgh, late professor of anatomy in the university and president of the General Medical Council, the outstanding figure in British anatomy for half a century, has died in his eighty-fifth year The son of an English father and a Scottish mother, he was born at Lancaster in 1832 and became a student in St Bartholomew's Hospital in 1850 He graduated with honors at the London University in 1857 His ability attracted the notice of Paget, then assistant surgeon to the hospital, who recommended him in 1854 to Goodsir, the professor of anatomy in Edinburg, when the latter was looking for a demonstrator He soon established a reputation both as a teacher and an investigator, and when Goodsir died in 1867 he succeeded to the chair, which he occupied for thirty-six years His successor, Prof Arthur Robinson, thus describes his work "Sir William Turner became an anatomist in 1854, and he remained an anatomist until his death in 1916 During the intervening period he published 276 communications of which twenty-six were addresses mainly on anatomic or medical subjects, and four were memorial notices The remainder dealt with human anatomy, human physiology and human pathology, comparative anatomy and anthropology In addition he edited Sir James Paget's 'Lectures on Surgical Pathology' and the collected work of Goodsir and of Rolleston, and he was for a long period the editor of the *Journal of Anatomy and Physiology* Indeed, he was the founder of this journal Among his most important original papers may be mentioned Relations of the Human Cerebrum to the Outer Surface of the Skull and Head," "System of Anastomosing Arteries Between and Connecting the Visceral and Parietal Branches of the Abdominal Aorta," and 'Supplementary Supply System of Nutrient Arteries for the Lungs" In these papers he drew attention to conditions of considerable practical importance which had previously been unrecognized But it was in the domain of comparative anatomy and anthropology that he became most famous His work on 'Comparative Anatomy' included invertebrates, fish and mammals, and particularly the various groups of cetacea In 1871 he commenced his important work on the placenta and in 1876 delivered lectures at the Royal College of Surgeons of England on the comparative anatomy of the placenta In anthropology he dealt with both prehistoric and modern man, and discussed the difference between the various races and indicated new methods for their estimation Some of his most interesting memoirs deal with the "Craniology of the People of Scotland" and Craniology of the People of the Empire of India" He was a must lucid writer and never ambiguous because he did not attempt to expound a subject until he had obtained a perfectly clear idea in his own mind His influence as a teacher was so great that the list of his pupils who have become professors of anatomy in Great Britain and the colonies is quite a long one His classical monographs on the craniologic features of the Scottish people both ancient and modern, on the peoples of the empire of India, on the extinct natives of Tasmania, and on the natives of New Guinea and of Borneo, were based on material which he gradually accumulated—chiefly through the help of his pupils

The Government Neglect of Science

Maj Leonard Darwin, who presided at the third Galton lecture before the Eugenics Education Society by Prof E B Poulton, said that the great lesson of Galton's life must be learned—that men are not born equal It would be pleasant to believe that all suffering could be swept away by social reform, but we must bend our wills to the task of making the best of the world as we find it Social conditions would not prevent national degradation if the inborn qualities of a nation were deteriorating It was for us to devote ourselves in the first place to winning the war, and then—to quote Lincoln—to seeing "that this nation, under God, shall have a new birth of freedom" And Galton would have said that increasing freedom and racial degeneracy never marched hand in hand

The lecture was delivered by Professor Poulton, who said that the neglect of eugenics by the government had been as conspicuous as its neglect of other branches of science The next general election would reveal a revolution in political thought, and the Eugenics Education Society must fight alongside sciences and the great business interests of the country, insuring that scientific men and business men should have weight in our future form of government The government had treated scientific men with incredible meanness The late Professor Meldola was twice offered a decoration of the Legion of Honor—in 1900 and again in 1907 On both occasions the Foreign Office forbade him to accept it It could not be supposed that either Lord Salisbury or Sir Edward Gray wished to behave in so rude a manner to a friendly nation and to a distinguished man The cause was to be found in the wooden system erected by some jack-in-office of the permanent service in order to magnify his own petty tyranny Then came the war, and in the utter confusion caused by our policy the country was in serious difficulty, with many important industries under enemy control and quite inaccessible So Professor Meldola, with his unrivaled knowledge of the relations between science and industry, was asked to preside over some committees and to serve on others He was too patriotic to refuse, but the strain was too great for one who was far from strong, and he died after a few months of overwork The character of the examination for civil service posts and for the army must be changed and science must be given a far more important place That change would at once react on our public schools and the old universities, and would bring the members of future parliaments under the influence of science

Mr Robert Jones at the Franco-American Ambulance in Paris

When the staff of the Franco-American Ambulance in Paris heard that Mr Robert Jones was in the city for a few hours, the members collected twenty or thirty patients with gunshot wounds of the upper limbs and induced him to give an impromptu lecture on their treatment He laid stress on the importance, in cases in which ankylosis of the shoulder joint is to be anticipated, of keeping the upper arm during treatment in such a position that the face and top of the head can easily be reached by the hand The advantage was that if ankylosis occurred with the humerus in this position, full utility of the upper limb was nevertheless practically conserved, since tilting of the shoulder blade would enable the patient to effect most of the other movements of the hand required in daily life A second point was the desirability of treating all fractures of the forearm with the radius in a position of complete supination instead of halfway between that position and full pronation Experience showed that adoption of the latter or classical position often resulted in serious loss of function, for though the hand could easily be pronated it could not be fully supinated If, contrariwise, a patient should be treated with the radius completely supinated from the beginning, the worst that could happen would be loss of natural pronation power, and this as compared with loss of supination power was a relatively small evil, since sufficient pronation could be secured by movement at the shoulder A third point related to gunshot wounds involving the wrist The joint should be kept, not in a position midway between flexion and extension (that is, with the hand in the same line as the forearm), but in one of hyperextension, or, so to speak, dorsal flexion, for should a stiff wrist result from the injury, the grasp of the fingers would be much stronger if the carpus were pushed backward than if the wrist were straight or the hand bent toward the flexor surface of the forearm The same position also afforded a much better chance of securing a return of power in cases of wrist-drop due to lesions of the musculospiral nerve But in such cases not merely the carpus but also the whole palmar surfaces of the fingers should be supported, the length of the digital portion of the splint being lessened as soon as the patient regained any power of extending the terminal phalanges by voluntary effort

Sanaphos Again

The proprietors of sanaphos are still endeavoring to exploit the strong anti-German feeling of the country for the benefit of their nostrum so that it may take the place of the German sanatogen The sale of the latter is still permitted under the condition that none of the profit be sent to Germany The sanaphos people in a quarter page advertisement in the *Times* are asking the public to petition Parliament for the passage of an act to forbid firms trading which are mainly owned by Germans for the reasons that "(1) Sanatogen is not 'necessary' now because (2) it is not the best article of its kind now available, (3) it is surpassed by the later, more highly perfected and wholly British owned product, sanaphos" This "petition" is accompanied by some dozens of anonymous testimonials alleged to be from physicians and by a few from former users of sanatogen who declare that sanaphos is a much better article It is evident that the methods of nostrum venders whether German or British, do not differ and may be summed up in one word—bluff

New School of Tropical Medicine in Calcutta

The governor has laid the foundation stone of the new tropical medical hospital The school, which has received an endowment for ten professors, is already built, and will be opened after the war Help has been obtained from commercial circles, wealthy Indians, and the Rockefeller Foundation China is sending two physicians annually for training Sir Leonard Rogers the authority on tropical disease, declared that the school, which would be the first to be established in the tropical portion of the British empire, would be second to none in the world

Marriages

Thomas John Gannon Hogan, M D, Lockport, N Y, to Miss Anna May Harvey of North Tonawanda, N Y, in Fredonia, N Y, March 2

Charles Hermann Eyermann, M D, St Louis, to Miss N Irene Smith of Sullivan, Mo, in Chicago, March 4

Cullen Ward Irish, M D, Barberton, Ohio, to Miss Pauline Hartley of Athens, Ohio, March 1

Sessler Hess, M D, Muskogee, Okla, to Miss Irene Marrow of Nashville, Tenn, December 24

Hugo Kenneth Schussler, M D, New York City, to Miss Sybil Conklin of San Diego, recently

[illegible]alsey DeWolf, M D, Providence, R I, to Miss Edith [illegible]e of Philadelphia, recently

Deaths

Benjamin Franklin Campbell, M D, Brookline, Mass, Harvard Medical School, 1857, aged 81, a Fellow of the American Medical Association and a veteran of the Civil War, in which he served as assistant surgeon attached to the U S Army Field Hospital, Pamunkey River, Va, and the Webster U S Army General Hospital, Manchester, N H, for several years a member of the Boston school bo[illegible] representative in the legislature from East Bosto[illegible] senator from the First Suffolk District, [illegible] and state March 9 [illegible]ied at his home,

Alfred Patten, M D, Mineola[illegible] Medicine, Louisville, 1881[illegible] Texas, Kentucky School of local surgeon at [illegible], aged 68, a Confederate veteran, Texas, [illegible]eola for the Missouri, Kansas and [illegible] Texas and Pacific systems, president of the [illegible]ola State Bank, vice president of the Golden State Bank, and stockholder in a number of other banks, vice president of the Mineola Light, Ice and Power Company, died at his home, March 7, from pneumonia

Irving O Nellis, M D, Utica, N Y, University of Vermont, Burlington, 1882, aged 59, formerly a Fellow of the American Medical Association, a member of the Medical Society of the State of New York, for many years a practitioner of Herkimer, N Y, and coroner of Herkimer County for five years, health officer of Herkimer from 1884 to 1894, and later president of the village health board and deputy sheriff of Herkimer County, died at his home, March 8

John Specht, M D, Superior, Wis, College of Physicians and Surgeons, Keokuk, Iowa, 1883, aged 55, a Fellow of the American Medical Association and once president of the Douglas County Medical Society, one of the leading surgeons of the northwest, once health commissioner of Superior, died in the Eitel Hospital, Minneapolis, March 8, after an operation for appendicitis and disease of the gallbladder

Nathan Gross Bozeman, M D, New York City, College of Physicians and Surgeons in the City of New York, 1885, aged 60, a Fellow of the American Medical Association, gynecologist to St Mary's Hospital, and consulting surgeon to the Bayonne and Hackensack (N J) hospitals and the Northwestern Dispensary, a gynecologist, well known in the Middle States, died at his home, March 17, from pneumonia

Joseph Amadie Tremblay, M D, Ecole de Medecine et de Chirurgie, Montreal, 1869, aged 69, a member of the Montana State Medical Association, for many years a practitioner of Missoula, Mont, and later a resident of Butte, for three terms coroner and for many years county physician of Silver Bow County, died at the home of his daughter in Butte, March 6, from heart disease

Walter L Dorland, M D, Pueblo, Colo, Western Reserve University, Cleveland, 1874, aged 66, formerly a Fellow of the American Medical Association, a member of the Colorado State Medical Society and once president of the Pueblo County Medical Society, local surgeon of the Santa Fe System and of the American Smelting and Refinery Company, died at his home, March 8

W W Fitts, M D, Carrollton, Ga, Atlanta (Ga) Medical College, 1860, aged 85, a member of the Medical Association of Georgia, a practitioner and druggist, and a member of the board of directors of the First National Bank of Carrollton, for nearly thirty years president of the local board of education, died at his home, March 9

Joseph H Hewitt, M D, Saranac Lake, N Y, Johns Hopkins University, Baltimore, 1906, aged 37, a Fellow of the American Medical Association, a member of the American Association of Pathologists and Bacteriologists, formerly a pathologist of Chicago and Cleveland, died in Saranac Lake, N Y, January 10

Edward M Doyle, M D, Yankton, S D, State University of Iowa, College of Medicine, Iowa City, 1888, aged 53, city commissioner of Yankton, for eighteen years a practitioner of Kansas City, for many years a member of the board of education, died at his home, March 3, from pneumonia

Charles Farquhar, M D, Olney, Md, University of Pennsylvania, Philadelphia, 1885, aged 74, a Fellow of the American Medical Association, secretary and treasurer of the Olney District Board of Health of Montgomery County, died at his home, February 1

James Lanier Darwin, M D, Huntsville, Ala, Bellevue Hospital Medical College, 1888, aged 56, a member of the Medical Association of the State of Alabama, who had gone to Memphis for a surgical operation, died in that city, March 3, from heart disease

Elias Gottstark Roos, M D, Scranton, Pa, University of Konigsberg, Germany, 1888, aged 56, a Fellow of the American Medical Association [illegible] and one of the foremost surgeons of Lackawanna Co[illegible] [illegible]unty, Pa, died at his home, February 29, [illegible] heart disease

Matthew G Guhman, M D, St Louis, Missouri Medical College, St Louis, 1891, aged 43, a member of the Missouri State Medical Association, who was injured in an automobile accident more than two years ago, died at his home from nephritis, March 10

John J Sweetland, M D, Constantine, Mich, Cincinnati College of Physicians and Surgeons, 1889, aged 52, a member of the Michigan State Medical Society, was instantly killed by the overturning of his automobile near Mottville, Mich, March 7

The Honorable James Edwin Robertson, M D., Montague, P E I, McGill University, Quebec, 1865, aged 75, a member of the Provincial Parliament in 1870, of the House of Commons in 1882, and of the senate in 1902, died at his home, October 19

James A Martin, M D, Palestine, Ill, Medical College of Ohio, Cincinnati, 1879, aged 60, a Fellow of the American Medical Association and for many years a practitioner and druggist of Palestine, died at his home, March 4, from heart disease

Benjamin M Beale, M D, Washington, D C., University of Georgetown, Washington, D C, 1873, aged 61, formerly a member of the Medical Association of the District of Columbia, died at his home, March 1, from cerebral hemorrhage

Charles Dallas McLeod, M D, Chatfield, Ohio, Marion-Sims College of Medicine, St Louis, 1892, aged 52, a member of the Ohio State Medical Association, mayor of Chatfield and coroner of Crawford County, died at his home, March 8

Frederick Jacoby, M D, Columbus, Ohio, Eclectic Medical College of Pennsylvania, Philadelphia, 1862, aged 84, for many years a practitioner of Columbus, died at the home of his daughter in Agricola, Va., March 7, from arteriosclerosis.

Benzion G Wernick, M D, Boston, Tufts Medical School, Boston, 1903, aged 48, formerly a Fellow of the American Medical Association, a member of the Massachusetts Medical Society, died at his home in Roxbury, about February 24

Hiram M Aspy, Geneva, Ind (license, Indiana, 1897), aged 65, a practitioner for forty years and a member of the Indiana State Medical Association, died in St. Joseph's Hospital, Fort Wayne, Ind, February 28, from disease of the stomach

John Herbert Frey, M D, Corsicana, Texas, University of Virginia, Charlottesville, 1889, aged 49, a Fellow of the American Medical Association, and well known as a pathologist and bacteriologist, died at his home, March 6

Hanson Liswell Marcy, M D, East Orange, N J, Hahnemann Medical College, Philadelphia, 1873, aged 65, for many years a practitioner of Richmond, Va, died at the home of his daughter in East Orange, March 9

Edward Cass, M D, Dresden, Ohio, Jefferson Medical College, 1854, aged 84, a member of the Ohio State Medical Association, for many years practitioner of Detroit, died at his home, March 9, from uremia

Osa Hoerner, M D, Lewisburg Ohio, Ohio-Miami Medical College of the University of Cincinnati 1913, aged 31, a member of the Ohio State Medical Association, died at his home, March 2, from scarlet fever

Gaspard Upton Peltier, M D, Cohoes, N Y, Bishop's College, Montreal 1873, aged 67, a member of the staff of the Cohoes City Hospital city physician of Cohoes for two terms, died at his home, March 2

Milton Almond Curtiss, M D, Kirksville, N Y, Syracuse (N Y) University, 1878 aged 60, a member of the Medical Society of the State of New York, died at his home, February 29, from pneumonia

Charles Harold Goldsmith, M D, New York City, Eclectic Medical College of the City of New York, 1906, Long Island Hospital, Brooklyn, 1910, aged 39, died at his home, February 29, from influenza

William S S Gay, M D, Chester, Pa, Jefferson Medical College, 1869, aged 70, for forty years a practitioner of Delaware County, Pa, died at the home of his daughter in Cleveland, February 26

S H Dickerson, Chandler, Tex (Registration, Forty-Eighth District Judicial Board of Texas, 1899), was instantly killed by the overturning of his automobile, 4 miles west of Chandler, February 29

James Prescott Chamberlain, Boston (license, Massachusetts, years of practice, 1894), aged 84, a practitioner for twenty-six years, died at the home of his niece in Palm Beach, Fla, March 1

Patrick Joseph Barry, M D, Auburn Iowa, State University of Iowa, Iowa City, 1891, aged 48, a member of the Northwestern Medical Society of Iowa, died in Carroll, Iowa, about March 9

Ira Charles Bush, M D, Santa Cruz, Calif, Rush Medical College, 1889, aged 55, a member of the Medical Society of the State of California, died at his home, February 17, from malignant disease

Julius Henry Moore, M D, Brooklyn, Long Island College Hospital, Brooklyn, 1874, aged 78, for many years a practitioner of Williamsburg, died at his home, March 11, from senile debility

George W Davis, M D, Marion, Ind, Eclectic Medical Institute, Cincinnati, 1880, aged 60, a Fellow of the American Medical Association, died suddenly in Marion, March 4, from heart disease

Henry Williams, M D., Odessa, Mo, Missouri Medical College, 1884, aged 60, local surgeon of the Chicago and Alton Railway, died at his home, February 1, from cerebral hemorrhage

Edgar Langston, Port Isabel, Ind (license, Indiana, 1897), aged 83, a practitioner of Indiana for more than half a century, died at the home of his son near Ellwood, Ind, March 10

Luke Arthur Harcourt, M D., Sacramento, University of Buffalo, N Y, 1868, aged 77, a member of the Medical Society of the State of California, died in San Francisco, March 3

Francis E Himmelwright, M D, Philadelphia, Jefferson Medical College, 1878, aged 69, for thirty years a practitioner of northeastern Philadelphia, died at his home, March 7

Marcus F Scruggs, M D., Coleman, Miss, University of Louisville, Ky, 1882, aged 60, a member of the Mississippi State Medical Association, died suddenly at his home, March 2

George Henry Masters, M D, Prospect, Ohio, Columbus (Ohio) Medical College, 1877, aged 68, a veteran of the Civil War, died suddenly at his home, March 5, from heart disease.

Enoch James Conyngton, M D, Decatur, Ala, Washington University, St Louis 1883, aged 57, one of the heroes of the yellow fever epidemics in Decatur in 1888, died at his home, March 4

Edward Joseph Cunningham, M D., Reno, Nev, University of Pennsylvania, Philadelphia, 1900, aged 38, died at the home of his parents in Philadelphia, March 3, from tuberculosis

George L Beach, M D, Chicago, Hahnemann Medical College, Chicago, 1883, aged 55, died in Hahnemann Hospital, Chicago, March 8, from carcinoma of the prostate

Audrim T Greer, M D, Abbeville, Miss, Memphis Hospital Medical College 1892, aged 55, died suddenly in the railway station in Holly Springs, Miss, February 24

Ferdinand Carl Ludwig Pfefferkorn, M D, Lawrence Mass, Hahnemann Medical College, Philadelphia, 188[illegible] aged 74, died at his home, March 8, from pneumonia

William C Foster, M D, East End Pittsburgh, Jefferson Medical College, 1874, aged 63, died at the home of his brother in Petrolia, Pa, March 7, from nephritis

Henry W Heryford, M D, Millville Calif, College [illegible] Physicians and Surgeons, Keokuk, Ia, 1885, aged 65, died [illegible] his home, February 24, from cerebral hemorrhage

Robert Barr Clark, M D, San Diego, Calif, Universit[illegible] the Victoria College, Coburg Ont, 1866, aged 77, died [illegible] Tacoma, Wash., February 9, from pneumonia

Ernan A Bush, M D, Delphi, Ind, Physio Medical C[illegible]lege of Indiana, Indianapolis, 1903, aged 34 also a dru[illegible] died in a hospital in Indianapolis, March 10

Samuel Currie Matthews, M D, Clinton, Ala [illegible] of Alabama, Mobile, 1915, aged 26, dropped dead [illegible] cranking his automobile, February 25

Joseph William Rowan, M D, Toronto Ont, Tr[illegible]cal College, Toronto, 1888, aged 55, died in Toro[illegible]ber 26, from a nervous breakdown

Albert C Matthias, M D, McComb, Ohio Wester[illegible] University, Cleveland, 1869, aged 71, a veteran [illegible] War, died at his home March 6

John Miller Longcoy, M D, Lima, Ohio [illegible] Medical College, 1882, aged 67, died at his h[illegible] 26, from disease of the stomach

Winfield S Van Horn, M D., Findlay Ohio [illegible]ical Institute, Cincinnati, 1883, aged 62 died [illegible] March 7, from arteriosclerosis

Charles A Bailey, M D, Los Angeles, [illegible]mont, Burlington, 1878, died suddenly in L[illegible]ruary 29, from heart disease

William O Southard, M D, Jonesville S C [illegible]lege of Georgia Augusta, 1875, aged 6[illegible] died at his home, March 7

William James Stockard, M D., La[illegible] Vanderbilt University, Nashville, Tenn [illegible] at his home, February 27

Henry B Scurlock, Losoya Texas [illegible] aged 59, a practitioner since 1879 died [illegible] Antonio, Texas, March 9

Antoinette C Pfau, M D., Cincinnati [illegible]lege, Cincinnati, 1899, aged 66 died [illegible] from nervous breakdown

Charles Orrison Maine, M D., [illegible]mouth Medical School, Hanover, N H [illegible] at his home, March 8

Girard Wilkie Shipman, M D., [illegible] College of Medicine and Surgery [illegible] home, February 29

Robert Callihan, M D., Ro[illegible]cal College, 1874, aged 74, [illegible] from heart disease

Oscar Vernon Harris, M.D., C[illegible] College, 1889, aged 60, died [illegible]bral hemorrhage

Henry Betz, M D., Br[illegible] York City, 18[illegible], aged [illegible] pneumonia.

Edward Llewellyn [illegible] (N Y) Medical C[illegible] March 6

Herbert A. Ga[illegible], M D [illegible]fornia, San F[illegible]ruary 26

[illegible]

[illegible]

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

U S COMMISSION TO INVESTIGATE THE PROPRIETARY MEDICINE BUSINESS

The Board of Trustees of the American Medical Association, at its meeting, February 9, had called to its attention the action of the House of Delegates relative to appealing to Congress to appoint a commission for the investigation of the proprietary medicine business The board was advised that the officers of the Association had been informed that the most effective way of presenting this matter would be to have it brought to the attention of the president by representatives of the Association In view of this, the board asked the following to call on the president Dr William L Rodman, President of the Association, Dr W T Councilman, chairman of the Board of Trustees, Dr Alexander Marcy, Jr, Riverton, N J, Dr Hiram Woods, Baltimore and Dr George H Simmons, Chicago Dr Rodman arranged that the president grant an audience, March 9 Dr Rodman died the day before—March 8—and Dr Woods was ill and not able to be present, but the others appeared before the president Doctor Councilman presented the subject in the form of the following letter

The President

Sir —The relation of the proprietary medicine business to the public health is so close and vital that the American Medical Association some years ago commenced a practical investigation of the substances which were sold to the medical profession and public as remedies for disease The object of these investigations has been to obtain and make public the facts thus far obtained with the ultimate object of safeguarding the health of the people The results have been published by the American Medical Association in its journal, in pamphlets and in books Similar investigations have been made by municipal and state boards of health, among the latter being Connecticut, Indiana, Kansas and North Dakota These proprietary and patented preparations sold to the public have been investigated also by the United States Public Health Service, by the Bureau of Chemistry of the Department of Agriculture and by the United States Post Office Department, as the activities of these several branches of the federal government brought them in relation to these articles of trade The result of the various inquiries has been to demonstrate that much of the business in those proprietary medicines colloquially known as "patent medicines" is an evil of national scope, a menace to the public health, and a grave economic waste While much has been accomplished in the United States by the Food and Drugs Act and through the Post Office Department, the problem as it affects the people of the whole country has been scarcely touched

In 1907 a commission appointed by the Australian commonwealth to investigate the question of "patent medicines" in their relation to the health of the people of that country published an exhaustive report In this considerable space was devoted to "patent" and proprietary medicines emanating from the United States Since then the Australian commonwealth specifically debarred from that country certain medical preparations originating in the United States

Four years ago the British Parliament appointed a select committee "to consider and inquire into the question of the sale of patent and proprietary medicines and medical preparations and appliances and advertisements relating thereto" This committee made an exhaustive investigation extending over three sessions of Parliament and held thirty-three public sittings It made a comprehensive report, which, together with the Proceedings, Minutes of Evidence and Appendices, was published in August, 1914, by order of the House of Commons This report, as did that of the Australian commission, included investigations of certain American products which revealed facts not to the credit of our country The British report embodied recommendations urging the enforcement of certain laws then existing, and suggested additional, specific, remedial legislation

The House of Delegates of the American Medical Association, apportioned among all the states and representing over seventy-five thousand physicians, at its annual session in San Francisco last June, adopted certain preambles calling attention to the conditions referred to above, and a resolution praying the president and the Congress to consider the advisability of creating a commission to investigate the proprietary medicine business in the United States—such investigation to include not only the actual products, but the methods of sale and advertising thereof, and further praying that the results of this investigation be published for the information of Congress, as well as for the enlightenment of the general public

The American Medical Association is firmly convinced that the solution of this problem is of vital importance to the public health, and by no means negligible from an economic point of view, further that the problem is national in scope and its solution is impossible if left to the individual states

The American Medical Association through its undersigned committee earnestly prays that you will consider the advisability of recommending to Congress the appointment of a commission or special committee empowered to investigate the entire subject and to publish its findings for the enlightenment of the public and for the welfare of the nation and to aid Congress in enacting remedial legislation if such shall be deemed necessary

The president, while not making any definite promises, expressed his interest in, and sympathy with the proposition

ARE PHYSICIANS SELFISH IN OPPOSING FRAUDULENT "PATENT MEDICINES"?

While the Manufacturers Say They Are, the Druggists Are Not Convinced

We have, at various times, referred to the stock argument of the manufacturers to the effect that the medical profession is actuated by selfishness in giving the public the facts regarding fraudulent "patent medicines" As we have said before, there never was, in fact, a weaker argument, although, superficially, it is doubtless accepted by many who have given the question no thought Every physician knows that the lurid advertisements of fraudulent "patent medicines" send many, many patients to his office Every physician who has been in practice any length of time knows also that the sale and use of fraudulent "patent medicines" are responsible for many cases of prolonged sickness, due to the neglect of disease in its early stages That the physician can possibly be actuated by altruistic motives in giving the public facts on a subject which his special knowledge peculiarly fits him to speak authoritatively, is never admitted by the manufacturer of fraudulent nostrums Those who thus charge the medical profession with bad faith may fool some people some of the time, but they don't fool the druggists of the country No better illustration of this fact can be given than an editorial that appears in the current (March) issue of the *Druggists' Circular,* a journal that represents all that is best in the profession of pharmacy The editorial, which appeared under the title, "Manufacturers of Nostrums Blind to Physicians' Humanitarianism," is here given

"One of the favorite arguments of the fakers who oppose the letting in of the light on their fakery by physicians, health officers and the better class medical journals, is that the fake medicines are cutting into the doctors' practice and the doctors are therefore financially interested in putting the fakers out of business That there is no foundation in truth for such an argument so far as physicians of professional standing are concerned, is well known to pharmacists generally If there are any who do not realize that medicine is among the most altruistic professions, even if it is not the most altruistic, they have only to consider what physicians are doing to prevent disease, in order to be forced to such a realization

"Mosquitoes, flies and other insects disseminate the germs of yellow fever, typhoid fever and other diseases Physicians discovered this fact Did they keep it to themselves, or did they publish it broadcast to the world? If the medical profession were as eager for practice as the nostrum fakers would have us believe, they would have said among themselves Flies and mosquitoes are our best *friends*, they cause sickness and the more sickness there is the busier we are and the more money we collect That is what the nostrum fakers would have said, and their minds are so constituted as to be unable to entertain a thought of a man's doing for the sake of humanity something which appears on its face to be depriving him of a part of his income it is the possession of that kind of mind that leads a man into the business of trifling for profit with human health and life

"Boards of health everywhere are endeavoring to abate those nuisances which are the cause of sickness Members of the medical profession are like members of a fire department in that they seek to prevent the very thing which makes their calling a necessity What would we think of a fireman who purposely permitted a conflagration in order that his comrades might show the city how important it was to keep up a well-paid fire department? And what would be thought of a man who charged the firemen of the country with opposing on the ground that it was cutting into the firemen's business, some device for putting out fires, when the firemen themselves knew the device to be a fake and an obstacle to fire prevention—a menace because of the false sense of security which it gave in time of danger?

Physicians need no help from us to set them right before the world We are not offering this as any such help We write it merely to call anew the attention of our readers to facts with which they are already conversant in order that they may not be misled by the false pretenses of those whose interest it is to mislead them Much is said and written about the relations between physicians and pharmacists, the subject being one of the most hackneyed in the literature of our calling, but so long as every pharmacist knows a self-sacrificing doctor who is a sort of counterpart of old Willum MacLure, and every physician knows a pharmacist on whom he may rely as guide, philosopher and friend, those relations are not going entirely to the bad And neither are the druggists going to allow the nostrum fakers to poison their minds against the doctors, for among druggists there is a strong spirit of humanitarianism which enables them to see a side of the medical profession to which the nostrum men are blind"—(*The Druggists Circular, March, 1916*)

Correspondence

The Alleged Production of Pellagra by an Unbalanced Diet

To the Editor —The paper on pellagra by Dr Joseph Goldberger, which appeared in The Journal, Feb 12, 1916 has interested me very much, especially his account of the experiment on convicts in Mississippi, from which he concludes that at least six of the eleven volunteers developed pellagra while under observation and apparently as a result of consuming an unbalanced or faulty diet

The earliest account of this experiment, which has come to my notice, appeared in the Jackson *Daily News* Nov 1, 1915 the headlines of which are shown in the accompanying illustration (Fig 1) In this report is a copy of a letter from Dr Goldberger to Governor Brewer of Mississippi, which is as follows

"Governor Earl Brewer,
"Jackson, Miss

"Jackson, Miss., Nov 1, 1915

"My Dear Governor

'I have the honor to advise you that the experimental test of the power to cause pellagra by means of diet, which your interest and cooperation made possible at the Rankin state farm on eleven convict volunteers, terminated yesterday, Oct 31, 1915

The test has been completely successful, inasmuch as not less than six of the men have developed pellagra

'It is needless for me to tell you of the great importance of this result to humanity For nearly two hundred years science has been groping for the cause of pellagra a disease which in recent years has sorely afflicted our southern states, and yours among them The official records show that in your state over one thousand deaths were assigned to this one cause alone last year, and I am informed that this number will be greatly exceeded this year

'Science and humanity will for all time owe you a profound debt of gratitude

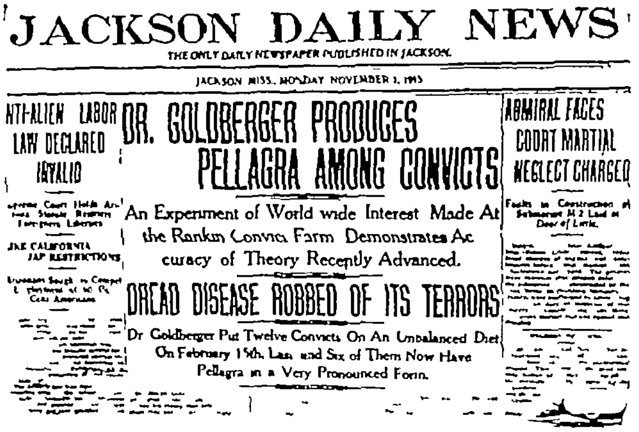
The convict volunteers have faithfully carried out their agreement to submit themselves to the test, and the test being now completed, it is my duty to most strongly urge their claim on the people of your state, through you, for a pardon of their sentence and liberation from the penitentiary

"These men have been under great physical strain All are sick men I would therefore strongly advise that they remain at the farm for a period of at least two weeks to receive the proper diet in order to, at least, start them on the road to health Unless this is done there is serious danger of permanent and grave injury to their health Should they wish to remain it will be a pleasure to cooperate in providing the proper diet and medical supervision

'In closing permit me, Governor, to express to you, the board of trustees and other prison authorities, my profound personal appreciation and thanks for your hearty cooperation Without it the experiment would have been impossible, and the cause of pellagra would still be in dispute

"Respectfully,
"Joseph Goldberger,
"Surgeon in Charge Pellagra Investigations"

The reporter's account states further that, despite the earnest advice of Governor Brewer and Dr Goldberger, all the members of the pellagra squad desired immediate release and that they all left for their homes Nov 1, 1915 He says, further, 'All members of the squad looked pale and emaciated and several of the number bore the sores on their bodies so distinctive of pellagra" These closing remarks of the reporter contain the only description of the lesions or their location which I have noted in this newspaper report



JACKSON DAILY NEWS

THE ONLY DAILY NEWSPAPER PUBLISHED IN JACKSON

JACKSON MISS., MONDAY NOVEMBER 1, 1915

NTI-ALIEN LABOR LAW DECLARED INVALID

DR. GOLDBERGER PRODUCES PELLAGRA AMONG CONVICTS

An Experiment of World wide Interest Made At the Rankin Convict Farm Demonstrates Accuracy of Theory Recently Advanced.

DREAD DISEASE ROBBED OF ITS TERRORS

Dr Goldberger Put Twelve Convicts On An Unbalanced Diet On February 15th, Last, and Six of Them Now Have Pellagra in a Very Pronounced Form.

ADMIRAL FACES COURT MARTIAL NEGLECT CHARGED

Fig 1 —Portion of first page of the Jackson *Daily News* Nov 1 1915

The next noteworthy account of this experiment (Goldberger, *Joseph*, and Wheeler G A., Experimental Pellagra in the Human Subject Brought About by a Restricted Diet) appeared in *Public Health Reports* (Nov 12, 1915, p 3336) In this paper are the following statements

Of the 11 volunteers, not less than 6 developed *symptoms*, including a typical' dermatitis, justifying a diagnosis of pellagra The nervous and gastro-intestinal symptoms were mild but distinct The dermatitis was first noted between September 12 and September 24 1915, or not later than five months after the beginning of the restricted diet It is of great interest to note that in all our cases the skin lesions were first recognized on the scrotum Later there appeared lesions on the backs of the hands in two cases and the back of the neck in one case The scrotal lesions conformed to the type described and figured by Merk ' (Merk Ludwig Die Hauterscheinungen der Pellagra, Innsbruck, 1909, p 24, Fig 6") The conclusion is drawn that pellagra has been caused in at least 6 of 11 volunteers as the result of the restricted diet on which they subsisted"

The National Association for the Study of Pellagra held its third triennial meeting at Columbia, S C, Oct 21 and 22, 1915, or approximately one month after the appearance of the dermatitis in these cases Dr Goldberger attended this meeting It may be pertinent to inquire why no mention of this alleged important discovery was made at this meeting and why recognized authorities on the diagnosis of pellagra, such, for example, as Dr C H Lavinder, surgeon, Public Health Service, then president of the National Association for the

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

U. S. COMMISSION TO INVESTIGATE THE PROPRIETARY MEDICINE BUSINESS

The Board of Trustees of the American Medical Association, at its meeting, February 9, had called to its attention the action of the House of Delegates relative to appealing to Congress to appoint a commission for the investigation of the proprietary medicine business. The board was advised that the officers of the Association had been informed that the most effective way of presenting this matter would be to have it brought to the attention of the president by representatives of the Association. In view of this, the board asked the following to call on the president: Dr. William L. Rodman, President of the Association, Dr. W. T. Councilman, chairman of the Board of Trustees, Dr. Alexander Marcy, Jr., Riverton, N. J., Dr. Hiram Woods, Baltimore, and Dr. George H. Simmons, Chicago. Dr. Rodman arranged that the president grant an audience, March 9. Dr. Rodman died the day before—March 8—and Dr. Woods was ill and not able to be present, but the others appeared before the president. Doctor Councilman presented the subject in the form of the following letter:

The President:

Sir:—The relation of the proprietary medicine business to the public health is so close and vital that the American Medical Association some years ago commenced a practical investigation of the substances which were sold to the medical profession and public as remedies for disease. The object of these investigations has been to obtain and make public the facts thus far obtained with the ultimate object of safeguarding the health of the people. The results have been published by the American Medical Association in its journal, in pamphlets and in books. Similar investigations have been made by municipal and state boards of health, among the latter being Connecticut, Indiana, Kansas and North Dakota. These proprietary and patented preparations sold to the public have been investigated also by the United States Public Health Service, by the Bureau of Chemistry of the Department of Agriculture and by the United States Post Office Department, as the activities of these several branches of the federal government brought them in relation to these articles of trade. The result of the various inquiries has been to demonstrate that much of the business in those proprietary medicines colloquially known as "patent medicines" is an evil of national scope, a menace to the public health, and a grave economic waste. While much has been accomplished in the United States by the Food and Drugs Act and through the Post Office Department, the problem as it affects the people of the whole country has been scarcely touched.

In 1907 a commission appointed by the Australian commonwealth to investigate the question of "patent medicines" in their relation to the health of the people of that country published an exhaustive report. In this considerable space was devoted to "patent" and proprietary medicines emanating from the United States. Since then the Australian commonwealth specifically debarred from that country certain medical preparations originating in the United States.

Four years ago the British Parliament appointed a select committee "to consider and inquire into the question of the sale of patent and proprietary medicines and medical preparations and appliances and advertisements relating thereto." This committee made an exhaustive investigation extending over three sessions of Parliament and held thirty-three public sittings. It made a comprehensive report, which, together with the Proceedings, Minutes of Evidence and Appendices, was published in August, 1914, by order of the House of Commons. This report, as did that of the Australian commission, included investigations of certain American products which revealed facts not to the credit of our country. The British report embodied recommendations urging the enforcement of certain laws then existing, and suggested additional, specific, remedial legislation.

The House of Delegates of the American Medical Association, apportioned among all the states and representing over seventy-five thousand physicians, at its annual session in San Francisco last June, adopted certain preambles calling attention to the conditions referred to above, and a resolution praying the president and the Congress to consider the advisability of creating a commission to investigate the proprietary medicine business in the United States—such investigation to include not only the actual products, but the methods of sale and advertising thereof, and further praying that the results of this investigation be published for the information of Congress, as well as for the enlightenment of the general public.

The American Medical Association is firmly convinced that the solution of this problem is of vital importance to the public health, and by no means negligible from an economic point of view, further that the problem is national in scope and its solution is impossible if left to the individual states.

The American Medical Association through its undersigned committee earnestly prays that you will consider the advisability of recommending to Congress the appointment of a commission or special committee empowered to investigate the entire subject and to publish its findings for the enlightenment of the public and for the welfare of the nation and to aid Congress in enacting remedial legislation if such shall be deemed necessary.

The president, while not making any definite promises, expressed his interest in, and sympathy with the proposition.

ARE PHYSICIANS SELFISH IN OPPOSING FRAUDULENT "PATENT MEDICINES"?

While the Manufacturers Say They Are, the Druggists Are Not Convinced

We have, at various times, referred to the stock argument of the manufacturers to the effect that the medical profession is actuated by selfishness in giving the public the facts regarding fraudulent "patent medicines." As we have said before there never was, in fact, a weaker argument, although, superficially, it is doubtless accepted by many who have given the question no thought. Every physician knows that the lurid advertisements of fraudulent "patent medicines" send many, many patients to his office. Every physician who has been in practice any length of time knows also that the sale and use of fraudulent "patent medicines" are responsible for many cases of prolonged sickness, due to the neglect of disease in its early stages. That the physician can possibly be actuated by altruistic motives in giving the public facts on a subject which his special knowledge peculiarly fits him to speak authoritatively, is never admitted by the manufacturer of fraudulent nostrums. Those who thus charge the medical profession with bad faith may fool some people some of the time, but they don't fool the druggists of the country. No better illustration of this fact can be given than an editorial that appears in the current (March) issue of the *Druggists' Circular*, a journal that represents all that is best in the profession of pharmacy. The editorial, which appeared under the title, "Manufacturers of Nostrums Blind to Physicians' Humanitarianism," is here given:

"One of the favorite arguments of the fakers who oppose the letting in of the light on their fakery by physicians, health officers and the better class medical journals, is that the fake medicines are cutting into the doctors' practice and the doctors are therefore financially interested in putting the fakers out of business. That there is no foundation in truth for such an argument so far as physicians of professional standing are concerned, is well known to pharmacists generally. If there are any who do not realize that medicine is among the most altruistic professions, even if it is not the most altruistic, they have only to consider what physicians are doing to prevent disease, in order to be forced to such a realization.

"Mosquitoes, flies and other insects disseminate the germs of yellow fever, typhoid fever and other diseases. Physicians discovered this fact. Did they keep it to themselves, or did they publish it broadcast to the world? If the medical profession were as eager for practice as the nostrum fakers would have us believe, they would have said among themselves: Flies and mosquitoes are our best friends; they cause sickness and the more sickness there is the busier we are and the more money we collect. That is what the nostrum or a contusion or infectious process may induce embolism De Jong found gallstones in only one of five cases of acute pancreatitis and De Vries in two of his five cases A tendency to corpulence is noted in most of the instances of acute pancreatitis

115 **Pyelocystitis in Children**—Huet discusses in particular the medicinal treatment of pyelocystitis in young children, reviewing the literature of the last few years on the subject and tabulating the result of personal tests and experiences He repeated Duker's tests of the effect of various drugs on different kinds of bacteria, experimenting with hexamethylenamin, potassium citrate, sodium citrate and others, alone or in combination The results in the test tube did not correspond with the effect in the clinic He witnessed clinical benefit from salol only in one case This was a 10 months babe taken with alarming symptoms No effect was apparent from a dose of hexamethylenamin, but slight improvement followed 4 gm potassium citrate a day but it proved transient No better results were obtained with 0.1 gm salol five times a day but when this dose was increased to 0.2 gm five times a day the fever subsided in a remarkable manner After salol had been given for five days in succession there was slight anasarca but this subsided and permanent recovery followed one dose of 4 gm potassium citrate fractioned In two chronic cases the *Bacillus lacticus aerogenes* had been found in the urine for three and six months, but under two weeks of potassium citrate the urine was cleared from it It is evident that the effect of the drugs varies with the dosage, the acidity of the urine, and still other factors which vary from case to case It seems to be established now that bacteria from an inflamed intestine may pass into the blood Czerny and Moser have found both the *B lactis aerogenes* and the colon bacillus in the blood stream under such conditions, and there is reason to assume that they may pass readily into the urine The evidence to date seems to be against the assumption of ascending infection of the kidney pelvis from the bladder Huet has recently encountered a small epidemic of pyelitis, all in infants The first had a fever persisting after recovery from bronchitis and the fever was finally traced to pyelitis and a similar pyelitis then developed at one or two weeks' intervals in the four others There was no direct contact between the infants, and no preceding bowel trouble in any and the children were in three different apartments The infection must have been carried to each by the nurse who tended to them all at night and gave them their first feeding in the morning The question whether the infection occurred by way of the urethra, in changing the diapers, or by way of the mouth, in feeding them seems to be answered by the fact that the urine of one infant was repeatedly examined after it was taken sick, and was found constantly sterile until the pyelitis had been under way for nearly six days, with vomiting slight edema and fever When leukocytes and bacteria were finally found in the urine they were accompanied by a brief high fever The course of the infection and of the pyelitis and also the bacteriologic findings confirmed the special infection in these cases, a paracolon bacillus being cultivated from the urine of each with identical reactions in all to indol, maltose, milk, etc gram negative in all, and none liquefying gelatin Two of the cases were exceptionally severe All the data sustain the assumption that in the majority of cases the kidney pelvis is infected from within His conclusions from his research are to the effect that drugs to disinfect the pelvis are scarcely liable to reach the bacteria ensconced in the walls of the pelvis, which is the usual rule But the drugs play an important part in counteracting the intoxication of the urine and the consequences therefrom so that urine antiseptics are a necessity in every acute case The efficacy of potassium citrate is probably due to its property of mobilizing calcium This modifies and transforms the osmotic currents, lymph streams out, sweeping out bacteria with it and bringing them within the reach of our therapeutic measures He quotes Wright's commendation of potassium citrate as a valuable lymphagog and in opsonin therapy This may explain Huet adds why it is of so little use in acute pyelitis—before the system has had opportunity to produce opsonins—while its action in more chronic pyelitis is so effectual Its efficacy depends on its reenforcing of the natural curative processes

117 **Pregnancy and Laryngeal Tuberculosis**—This is a communication presented recently to the Netherlands Oto-laryngologic Society I 1/ it Hartog protests against the optimistic report on the relations between pregnancy and tuberculosis drawn up last year by a committee appointed by the national Netherlands Medical Society (Some of the data were mentioned in these columns, 1914, lxii, 243) Hartog's experience has been quite the reverse with laryngeal tuberculosis and he here relates some typical cases, emphasizing that conditions differ materially whether the tuberculous lesion is in the throat or lung The experience of laryngologists has shown that early interruption of the pregnancy will save the lives of many pregnant women with laryngeal tuberculosis

Finska Lakaresallskapets Handlingar, Helsingfors

LVII No 7 pp 795 934

119 The So Called Chronic Neurodermatitis (Prurigo diathésique—Besnier lichen simplex chronicus—Vidal) A Cedercreutz
120 Prophylaxis of Cholera in Finland (Huru Finland hindrat koleran intrangande i landet åren 1908 1909 och 1910) R Sievers
121 *Conversion of Face Into Vertex Presentation (Till frågan om behandlingen af forlossningen vid s k deflexionslagen) S E Wichmann
122 Weight and Size of the Newly Born at Term in Finland (For beredande undersokningar af det s k fullgangana finska fostrets vikt och dimensionsforhållanden) O Tudeer (Till kannedomen om kroppsvikten hos nyfodda framst med hansyn till forhallandena i Finland) E Runeberg Discussed in Nos 9 10 and 12
123 Salicylic Acid in Alcohol in Local Treatment of Acne and Variola (Salicylsyresprit vid varicellae och variola) P Z Collan

No 8 pp 935 1048

124 Treatment of Fractured Lower Jaw (Om protesbehandling af underkaksfrakturer) H Avellan
125 *Operative Treatment of Prolapse of Genital Organs E A Bjorkenheim
126 Congenital Fistulas and Cysts in the Neck (Om kongenitala halsfistlar och cystor) K V Tiisala
127 Definition of Sound Part From Standpoint of Industrial and Life Insurance (Hvilken ar inneborden af begreppet frisk och fardig kroppsdel ?) E Ehrnrooth

No 9 pp 1049 1254

128 A Paré and His Work, 1510-1590 (Dokument ur medicinens historica) R Tigerstedt
129 Eight Successful Operations on Brain or Spinal Cord (Till hjarn och ryggmargskirurgien) A Krogius
130 *Aspiration Treatment of Pleural Empyema (Till kannedomen om sugbehandling af pleuraempyem i anslutning till ett fall af pyopneumotorax) Y Meurman
131 *Improved Instrument for Mechanical Dilatation of the Uterine Cervix (Till frågan om det basta sattet att mekaniskt utvidga cervix under partus En ny dilatator) S E Wichmann

121 **Conversion of Brow or Face Presentation into Occiput Presentation**—Wichmann describes a method with which he changed the presentation at the first trial Two fingers of the left hand are introduced into the vagina as for the ordinary examination With these fingers the fetal head is pushed up until it is freely movable and these fingers support and control it throughout The stretched and stiff right hand is then applied as for an ordinary gynecologic examination It is held to form a lever with the thumb on the occiput and the fingers on the chest With this leverage action the occiput is worked down and the chest up while the fingers of the other hand work the head over until the posterior fontanel can be felt in the pelvic inlet The occiput is then released and the lever carried to the breech This is then pushed over toward the abdomen while the chest is still immobilized by the other arm of the lever He adds that as the intervention is outside of the uterus, the danger of infection is reduced The technic is simple, and owing to its resemblance to the ordinary bimanual gynecologic examination is easily mastered by any physician During the manipulation the segment of the uterus over the occiput is not stretched any more, the tension is reduced The manipulation proceeds slowly and gently, so that the danger of asphyxia is minimal The procedure is no more exacting than external version and he thinks it might be applied at the onset of delivery when needed while the child is more freely movable It can be done with the os closed or dilated, before or after rupture

of the membranes, and regardless of whether the head is already in the pelvic inlet or not In his six cases the presentation was converted to the occiput presentation at the first trial, and without the least trouble

125 **Operative Treatment of Genital Prolapse**—Bjorkenheim reports the ultimate outcome in 205 of the 300 cases in which operative treatment was applied for genital prolapse at the Helsingfors clinic, with an interval since of from one to twelve years The prolapse returned in 24 4 per cent Relapse occurred in 46 9 per cent of the 32 cases in which the Hegar or Lawson Tait vaginal plastic method was applied There was relapse further in 26 3 per cent of the 80 cases in which ventrofixation was done by the Czerny-Terrier method In 15 cases the women passed through a pregnancy later without disturbance after ventrofixation plus colpoperineorrhaphy according to Hegar, but 6 of these women had the prolapse return later The Schauta-Wertheim technic was applied in 10 cases with relapse in 11 1 per cent The round ligaments were shortened in 4 cases and the result has been permanently good Vaginal hysterectomy was done in 92 cases, the ultimate outcome is known in 68, with relapse in 13 2 per cent He ascribes the failures to lack of adequate care in the vaginal plastic operations With anterior colporrhaphy, for instance, the bladder should be entirely detached and the cystocele reduced by suturing in a fold of the bladder With colpoperineorrhaphy, on the other hand a high and firm raphe should be made, as well as a broad and strong rectovaginal septum, and the levator fascia should be sutured

130 **Aspiration Treatment of Pyopneumothorax**—Meurman writes from the field lazarett in Poland, donated by a group of manufacturers in Finland, to give an illustrated description of the vacuum bell which he uses on suppurating wounds in the chest The metal bell or cap measures 9 by 13 cm and is 4 cm high, with a rubber cover on both sides It fitted like a suction bell over the wound in the back in the case described

131 **Wichmann's Dilator**—The blades of this dilator move always parallel to the axis of the pelvic inlet It permits the cervix to be fully stretched in ten minutes in emergencies, or several hours can be taken to stretch it

Hospitalstidende, Copenhagen

February 2, LIX, No 5, pp 93 116

132 *Experimental Research With Artificial Pneumothorax and Resection of the Lung M Fenger

132 **Experimental Artificial Pneumothorax and Resection of the Lung**—Fenger's article is an illustrated description of work in this line on dogs at the Copenhagen Veterinary and Agricultural College laboratory His assumption that resection of the lung might be facilitated by an artificial pneumothorax was sustained by his actual experience The operation is much easier with an atelectatic condition of the lung, while the tendency to heal seemed as pronounced in atelectatic as in expanded lung tissue No evidences of permanent injury of the lung tissue could be detected from shutting off the blood supply for three-quarters of an hour, while this is a great help in operating A single row of interrupted sutures—after ligating the bronchi and large vessels—is enough to ensure hemostasis and the healing of the defect A number of technical points are emphasized, such as that the artificial pneumothorax does not modify general anesthesia, that overpressure does not cause the atelectatic lung to expand, suggesting that the compression causes the walls of the alveoli and bronchi to adhere together If this is the case, there is less danger of retention in the finer air passages and consequent pneumonia Another advantage of the artificial pneumothorax is that it permits ample oversight over the compressed lung when the pleura is opened, while the lung tissue is much easier to palpate When adhesions prevent complete pneumothorax, even the partial compression is a great aid, and the adhesions render it possible to do the resection without the necessity for a difference in atmospheric pressure

Norsk Magazin for Lægevidenskaben, Christiania

February, LXXVII, No 2, pp 181 316

133 *Pneumococcus Peritonitis, Four Cases O Tandberg
134 Elderberry Juice in Treatment of Neuralgia (Hyldebærsaft—av Sambucus nigra—som antinevralgicum) H J Vetlesen
135 *Test for Albumin in Stomach Content in Relation to Digestion Leukocytosis in the Pathologic Stomach (Salomons prøve og fordøielsesleukocytosen ved ventrikelsygdomme) N Paus
136 *Multiple Tumors (Om samtidig forekomst av flere selvstændig voksende—"multiple"—svulster) F Harbitz Commenced in No 1

133 **Pneumococcus Peritonitis**—In Tandberg's four cases the patients were little girls from 3 to 12 Two were from a locality where pneumonia had been unusually prevalent The onset was stormy in all, with fever and abdominal pains, vomiting in three cases, two of the children had diarrhea from the first, the others not until the third or seventh day, it subsided in two but in the others kept up intermittently throughout One of the children developed pneumonia at the same time as the peritonitis, two others two or four days later, while the lungs did not seem to be affected in the fourth case The appendix was incriminated at first, but the copious turbid pus, with the clumps of fibrin, suggested pneumococcus peritonitis as soon as the peritoneum was opened up, especially as the appendix seemed to be normal The absence of "perforation shock" also aided in excluding appendicitis as responsible for the peritonitis The abdomen was distended and tender in all, with rigid muscles, but not to the degree usual with peritonitis of other origin There was an area of dulness on each side in one of the cases Pneumococci were found in the pus in the three cases examined On agar both pneumococci and staphylococci grew from the pus in one case and the former alone in two cases One child, with the operation the second day, was dismissed in good condition the second month, the others, with operation not until about the seventh day could not be dismissed until after four months, but all recovered after multiple incisions and provisions for ample draining

135 **Determination of Albumin in Stomach Content as Test for Gastric Cancer**—Paus has applied Salomon's test for albumin in stomach content in 6 cases of known cancer, in 5 of gastric ulcer, and in 9 persons free from gastric symptoms The findings are tabulated The response was positive in only 5 of the 6 cancer cases With ulcer, the reaction was always slight or negative, so that a pronounced reaction is good presumptive evidence of cancer, but when this occurs the symptoms usually point to cancer without necessity for any test Paus investigated in the same patients further whether there was a digestion leukocytosis with cancer He found it present in a moderate degree in the 6 cancer cases, more marked in the cases with normal stomach, while in 2 of the 5 ulcer cases there was no appreciable increase in the numbers of leukocytes after the midday meal Analysis of these cases showed that digestion leukocytosis is evidently dependent on the functioning of the stomach as a whole, both chemical and mechanical, and has no differential significance

136 **Multiple Tumors**—Harbitz relates that in the last fifteen years he found cancer in 14 5 per cent of the 3,613 cadavers examined In 103 cases multiple tumors were found, that is, in 2 8 per cent of all the cadavers, including 51 cases of associated malignant and benign tumors and 16 cases of multiple cancers of different types This latter group forms 0 44 per cent of all the cadavers and 3 per cent of the cancer cases In 2 cases both sarcoma and carcinoma were found separate, and in 2 cases combined, in one case there were three separate carcinomas and in 3 others carcinoma was associated with glioma or endothelioma In some cases there were associated two or more tumors, all of manifest congenital origin A detailed and illustrated description is given of 3 new cases of a sarcoma developing secondarily on an abdominal metastatic carcinoma from an ovarian cancer In another case a mammary tumor proved to be a sarcoma carcinoma with features suggesting an embryonal origin He remarks in concluding this long study of multiple tumors that he has found nothing to throw light on the etiology and, in particular, nothing to suggest an infectious origin

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